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TRANSACTIONS

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TRANSACTIONS

OF THE

MEDICAL ASSOCIATION

OF

GEORGIA.

FORTY-FOURTH ANNUAL SESSION.

1893.

ATLANTA, GA.
PUBLISHED BY THE ASSOCIATION.
1893.

"RESOLVED, That this Association shall not be considered as indorsing views of authors of papers published in connection with the Transactions, unless definitely so indorsed in the Proceedings of the Association.

"RESOLVED, That the above resolution appear annually upon the title page of our published Proceedings."

Transactions 1873.

The Franklin Printing and Publishing Co., Atlanta, Ga.

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MINUTES

OF THE

Medical Association of Georgia.

FORTY-FOURTH ANNUAL SESSION.

FIRST DAY—MORNING SESSION.

AMERICUS, GA., April 19, 1893.

The Association convened in the Council chamber of the City Hall, and was called to order by the President, Dr. A. A. Smith, of Hawkinsville, at 10 A. M.

Divine blessing was invoked by the Rev. A. M. Williams, pastor of the First Methodist church, after which the welcoming address was delivered by Mayor A. S. Cutts, as follows:

ADDRESS OF WELCOME.

Mr. President and Gentlemen of the Medical Association:

The performance of a public duty is often burdened with the thought that we are not equal to the occasion; feeling our incompetency we shrink from its performance as a task. Yet when I stand before this distinguished assemblage, a body of men noted for their mental culture and refinement, and especially famous in the art and science of medicine and surgery, the duty I have the honor to perform becomes one of sincere pleasure.

In bidding you welcome to our city, the gem and metropolis (as we call it) of Southwest Georgia, we can but feel how little we deserve the high honor you bestow upon us, coming amongst us as you do, the representatives of a profession that has existed

for three thousand years. Of the early history of the profession it is not necessary to speak. We know that its devotees of the early period had to grope their way in darkness without the aid of the sunlight of science and the long years of experience of predecessors to guide them.

As the years rolled by the distinguished members of your profession were not idle. Victory after victory crowned their efforts, more especially in recent years, when the magnitude of their scientific researches in medicine and surgery both astonished and became the admiration of the world.

Such perfection in surgery has been accomplished that after a surgical operation performed on John Smith he becomes so near a new man that he might well call himself Jones, Brown or Johnson.

Much credit is due your State organization, for it has, without doubt, been greatly benefited in disseminating the good results of new discoveries and ridding the country of such of your profession as are incompetent and unworthy of confidence.

Your profession deserves the gratitude of not only this country but all others for the grand progress and success in discovering and adopting the means by which the spread of contagious diseases has been checked. The beautiful cities of the South have in years gone by been almost decimated by epidemics, and we should feel especially gratified and thankful at the results of your noble efforts in this line.

The microbe has been discovered and seems to be the cause of all the ills and diseases that poor humanity is heir to. With the vast field of scientific research still open to your profession may we not hope that some remedy will soon be discovered which will destroy them completely without injury to the patient?

The antidote for the microbe, like the waters of perpetual youth, may lie hidden beneath some lofty mountain peak or far away in some lonely dell that has never been disturbed by the voice or footfall of mortal man, where nature and nature's God reign supreme. I give it to you strongly in charge to discover it.

The highest meed of praise is due the members of your profession for their exalted patriotism and devotion to duty. In the midst of epidemics of virulent, contagious diseases, while thousands flee from their homes and friends, the doctor stands nobly to his post. At the risk of his life his time and talents are devoted to the cure and comfort of his patients.

On the battlefield, amidst its din and strife, while his countrymen are falling around him, the dangers of his surroundings are forgotten in stanching the lifeblood of his comrades. As the family physician, in sickness we long for his coming. His

patience around the bed of affliction, his forbearance at the whims of his patient, command our admiration and bind him to us in the strong bonds of friendship and affection.

The family physician stands at our bedside when we draw the first breath of life. He attends us in the ills of childhood, and in the sickness of mature years he is the one friend who is always welcome. When we become old and infirm from age and disease he is by our side, and the last lingering hope of life is cast upon his benevolent face. Noble, faithful and true, the family secrets are sacred in his breast. Such men are surely always welcome at every home, at every fireside.

Mr. President and gentlemen of the Medical Association of Georgia, I have the honor to tender you the freedom of the city of Americus. In the name of the fair women of our city and every citizen within its limits, I bid you a hearty welcome and tender you the hospitality of our homes.

Mr. President: It affords me great pleasure to introduce to you Dr. Mark H. O'Daniel, of Macon, who will respond to the address of welcome we have just heard, on behalf of the Association.

RESPONSE BY DR. O'DANIEL.

Gentlemen of the Medical Profession of Americus, and Gentlemen:

When I was notified I was to make the response to the address of welcome, I thought at first a mistake had been made, and that my brother, who has always been the speaker of the family, was the man, but when assured I was the chosen one, I decided that no man could tell the people of this beautiful little city how gladly and graciously we accept their cordial invitation and warm greetings and welcomings, so beautifully and tenderly tendered by your spokesman, Col. Cutts, as myself. Having once lived in Americus, in the year 1883, and mingled with her people nearly a year, I know what they mean when they bid welcome to their homes, their city, their hearts. They mean, ask for what you want and take all you can get, what you want or would like; it's yours—none too good for their friends. When our lamented friend, Dr. S. B. Hawkins, invited this body here, whilst we were in session in Columbus a year ago, Atlanta, Savannah, Augusta, Thomasville and other cities were placed in nomination against Americus, and as the balloting went on many doctors said and thought Americus too small to entertain the Medical Association of Georgia, and said, "Oh, let's go to Atlanta or Savannah, or

some big place," and Dr. Hawkins, watching every ballot, whispered to me, "Help me get it, O'Daniel, help me get it," and as I cast my vote, hoping, too, we would come to Americus, I told the gentlemen that, although Americus was small compared to the other cities, yet her people were large, noble, generous and as hospitable as ever Southern born men and women grew to be, and that when we had assembled in her gates and felt the warmth and cordiality of her people we could feel, as was said upon the mount, "It is good for us to be here."

Gentlemen, we are happy to be here amongst you. We are yours, and you are ours. But when I look around and see missing from our body the bright and smiling countenance of that lamented nobleman, physician and gentleman, Dr. Hawkins, a feeling of sorrow and regret creeps over me, and I am sure over this body. How happy he would have been to have been here. As we listened to words of welcome as they fell from the lips of Col. Cutts, I am sure, though invisible to us and silent in speech, yet his spirit united in every word. Yea, even more, in welcoming us to his home—the place where he wanted once more to see the Association of Georgia, which he loved so well and so long.

Well, gentlemen, we feel more than I can tell you, and you may rest assured we feel that you felt all you have said and done. When we look about us and view your beautiful city, hotels and houses of commerce, fine horses and most beautiful women, we are delighted to the fullest extent of that sense; for if there is a class of men on earth who admire splendid horses and lovely women it is the physicians. Americus has both, and we are an admiring set of doctors. We pray that you may feel all of these days as happy to have us as we shall be to be with you, and when we are gone, as sorrowful as you have been happy.

President Smith then delivered his annual address.

Dr. Mark H. O'Daniel: Mr. President, it has been customary for several years that when the President of the Association touches upon matters in his annual address pertaining to the welfare of the public, that such portions as are of interest to the laity shall be published in the daily papers. The President has referred to a State Board of Health, the curriculum of medical schools and a medical examining board. I therefore move that such sections of the address be published in part or in full in the Americus *Times-Recorder* and in the leading daily papers of the State.

I think it is a matter of public good, and I trust at this meeting a committee will be appointed by this Association to memorialize the legislature. I believe we have two or three papers to be read on the subject outlined by the President. We certainly should have a State Board of Medical Examiners not only to rid the State of quacks, but to protect the people from imposition.

Seconded by Dr. Engram, of Montezuma, and carried.

President Smith then called for the report of the Committee on Arrangements, Dr. G. T. Miller of Americus, Chairman.

Dr. Miller stated that the committee had no special report to make, except that on the evening of the second day a banquet would be tendered the Association by the physicians and citizens of Americus, and that members could obtain tickets from the Secretary.

The following is the programme:

FIRST DAY—WEDNESDAY, APRIL 19TH.

Morning Session –10 O'clock.

Prayer by Rev. A. M. Williams.
Address of Welcome by Mayor A. S. Cutts.
Response by Mark H. O'Daniel.
President's Annual Address.
Report of Committee on Arrangements.
Report of Committee on Programme.
Filling Vacancies on Board of Censors.
Applications for Membership.
1. Headache Versus Glaucoma, W. L. Ballard, M.D., Columbus.
2. "Shot Gun" Prescriptions, C. C. Hart, M. D., Cross Keys.
3. Puerperal Septicæmia and its Treatment, J. I. Darby, M. D., Americus.
Adjournment.

AFTERNOON SESSION—2:30 O'CLOCK.

Report Board of Censors.
Applications for Membership.
New Business.
4. State and Municipal Hygiene, J. C. Avary, M. D., Atlanta.

5. Rare Case in Obstetric Practice, O. H. Buford, M. D., Cartersville.

6. The Contagiousness of Consumption, J. G. Hopkins, M. D., Thomasville.

7. Multiple Neuritis "Alcoholic," Mark H. O'Daniel, M. D., Macon.

8. Puerperal Eclampsia, with Reference to its Cause and Treatment, A. C. Davidson, M. D., Sharon.

9. Puerperal Eclampsia, with Report of Cases, J. M. Head, M. D., Zebulon.

10. Non-Surgical Treatment of Typhlitis, E. H. Richardson, M. D., Atlanta.

11. Typhoid Fever, N. M. Darden, M. D., Norwood.

12. Science in Medicine and Surgery, J. McFadden Gaston, M. D., Atlanta.

Adjournment.

SECOND DAY—THURSDAY, APRIL 20TH.

Morning Session—9 O'clock.

Reading of Minutes.

Applications for Membership.

Report of Board of Censors.

Reports of Treasurer and Secretary.

Appointment of Auditing Committee.

13. Syphilis from a Sociological Standpoint, W. F. Westmoreland, M. D., Atlanta.

14. Asphyxia Neophytorum, R. J. Nunn, M. D., Savannah.

15. Periproctitis with an Abscess, and Report of a Case, M. L. Currie, M. D., Mt. Vernon.

16. Extra-Uterine Pregnancy, R. R. Kime, M. D., Atlanta.

17. Stab of the Stomach, the Organ Protruding through Abdominal Wall--Laparotomy—Recovery, J. W. Griggs, M. D., West Point.

18. Ophthalmia of the New Born, S. Latimer Phillips, M. D. Savannah.

19. The Necessity for a Medical Board in Georgia, L. B. Grandy M. D., Atlanta.

ORATOR'S ADDRESS AT 12 O'CLOCK.

Woman's Relations to the Practice of Medicine, Frank M. Ridley, M. D., LaGrange.

Adjournment.

AFTERNOON SESSION—2:30 O'CLOCK.

Report of Standing Committees.

Appointment of Nominating Committee.

Applications for Membership.
Report of Board of Censors.
Unfinished Business.

20. The Practice of Medicine in Georgia, A. C. Blain, M. D., Macon.

21. Symptoms Indicating Abnormal Conditions of the Alimentary Canal, with Report of Cases, C. D. Hurt, M. D., Atlanta.

22. Four Women who Refused Oöphorectomy and their Subsequent Histories, H. McHatton, M. D., Macon.

23. Drainage in Pelvic Surgery, Geo. H. Noble, M. D., Atlanta.

24. Partial Tenotomy a Radical Cure for Heterophoralgia, C. H. Peete, M. D., Macon.

25. Some Remarks on Aseptic Surgery, with Exhibition of Sterilizing Methods, T. M. McIntosh, M. D., Thomasville.

26. Operation for Fistula in Ano by Ligation, John J. Hill, M.D., Washington.

27. Report of Eleven Hundred Operations for Strabismus and Some Remarks upon the Same, A. W. Calhoun, M. D., Atlanta.

28. Conditions Indicating Abdominal Operations and Report of Cases, Frank M. Ridley, M. D., LaGrange.

29. Pneumonia, O. T. Kenyon, M. D., Weston.

30. Stone in the Bladder, with Report of Cases, F. W. McRae, M. D., Atlanta.

31. Fracture of the Skull, with Report of Case, W. R. Googe, M. D., Abbeville.

Adjournment.

THIRD DAY—FRIDAY, APRIL 21ST.

Morning Session—9 O'clock.

Reading of Minutes.
Applications for Membership.
Report of Board of Censors.
Report of Nominating Committee.

32. The Functions and Nutritive Value of Foods, Louis H. Jones, M. D., Atlanta.

33. Ante and Retroflexions of the Uterus, their Pathology and Treatment, W. W. Stewart, M. D., Columbus.

34. The Disappointments of the Menopause, J. C. Avary, M. D., Atlanta.

35. Injury to Foot, Ligation of Anterior and Posterior Tibial Arteries, W. B. Tate, M. D., Tate.

36. Two Rare Cases in Practice, P. L. Hilsman, M. D., Albany.

37. A Case of Aneurism of the Thoracic Aorta, N. P. Jelks, M. D., Hawkinsville.

38. Mechanical Treatment of Some Skin Anomalies, M. B. Hutchins, M. D., Atlanta.

39. Persistent Remittent or So-called Typho-Malarial Fever, with Report of Cases, W. P. Williams, M. D., Blackshear.

40. The Treatment of Some of the Most Common Forms of Pelvic Congestion in the Female, W. A. Crow, M. D., West End.

41. Toxic Amblyopia, by James H. Shorter, M. D., Macon.

Presentation of Voluntary Papers.

Adjournment.

AFTERNOON SESSION—2:30 O'CLOCK.

Application for Membership.

Report of Board of Censors.

42. A Review of "Dr. Senn's Views on Elastic Constrictions," W. H. Elliott, M. D., Savannah.

43. Diffuse Traumatic Aneurism, of Anterior Tibial Artery—Ligation of Femoral, F. R. Calhoun, M. D., Cartersville.

44. Specialism in Medicine, A. S. Hawes, M. D., Atlanta.

45. Cases of Perityphlitic Abscess, C. J. Carter, M. D., Atlanta.

46. Sterility in the Male, C. Evans Johnson, M. D., Atlanta.

47. Antipyretics, translated from the German, of a paper read before the National Medical Congress in Berlin, Cantani—translation made by myself, S. B. Poland, M. D., Griswoldville.

New Business.

Installation of New Officers.

Appointment of Annual Orator.

A. A. SMITH, M. D., President.

DAN. H. HOWELL, M. D., Secretary.

AMENDMENT TO CONSTITUTION OFFERED BY DR. J. G. HOPKINS.

Resolved, That section 1, article 3., of the Constitution, relating to membership be changed so as to read: "Any regularly educated white physician, who resides within the limits of this State, who is a graduate of a regular medical college in good standing, and who adopts and conforms to the Code of Ethics of the American Medical Association, shall be eligible to membership in this body.

The President appointed Drs. R. O. Engram and A. C. Blain on the Board of Censors, to serve during the sessions in the absence of Drs. Mulligan and Foster.

The reading of papers was then proceeded with, and the first paper was read by Dr. C. C. Hart, of Cross Keys, entitled "Shot-Gun Prescriptions."

Dr. J. I. Darby of Americus, read a paper on "Puerperal Eclampsia and its Treatment."

Discussed by Drs. McHatton, Hopkins, Williams, and discussion closed by the essayist.

Secretary Howell read letters of resignation from Drs. C. W. Barrier of Columbus, and Dr. Harris Hall of Milledgeville, which, on motion were accepted.

Dr. R. O. Engram moved a suspension of the regular business, and introduced the following resolution, which was seconded and adopted:

Resolved, That the President of this Association appoint a committee of one from each congressional district from the members of this Association to be known as "The Committee on Medical Legislation"; the duty of said committee to be to examine all bills and take cognizance of all legislation affecting the practice of medicine or the medical profession of this State. Also said committee is authorized to suggest such legislation or draft such bills, affecting medical legislation in this State, as said committee, so appointed, may deem to be to the best interest of the profession and the people of the State of Georgia.

On motion, the Association adjourned until 2:30 P. M.

FIRST DAY—AFTERNOON SESSION.

The Association reassembled at 2:30 P. M., and was called to order by the President.

The first thing in order was the reading of papers and Dr. J. M. Head, of Zebulon, read a paper entitled "Puerperal Eclampsia, with a Report of Cases."

Dr. J. G. Hopkins of Thomasville, followed with a paper entitled "Contagiousness of Consumption."

Discussed by Drs. Cox, Westmoreland and McRae.

Dr. Westmoreland moved that the paper of Dr. Hopkins be indorsed by the Association.

Seconded and carried.

Dr. J. McFadden Gaston, of Atlanta, read a paper on "Science in Medicine and Surgery."

Discussed by Drs. Westmoreland, Elliott, McIntosh, McRae, Kime, Stewart, McHatton, and, in closing, by the essayist.

Dr. Mark H. O'Daniel, of Macon, read a paper entitled "Multiple Neuritis Alcoholic."

Secretary Howell read letters and telegrams from the absent members.

On motion of Dr. Hopkins, the amendment to the Constitution, section 1, article 3, offered at the last meeting, was taken from the table and adopted.

The amendment is as follows:

Resolved, That section 1, article 3, of the Constitution, relating to membership be changed so as to read: "Any regularly educated white physcian, who resides within the limits of this State, who is a graduate of a regular medical college in good standing, and who adopts and conforms to the Code of Ethics of the American Medical Association, shall be eligible to membership in this body.

Dr. Willis F. Westmoreland, of Atlanta, read a paper entitled "Syphilis from a Sociological Standpoint."

Discussed by Drs. Cox, McRae, Hutchins, Moore, Hopkins, and, in closing, by the essayist.

On motion the Association adjourned until Thursday, 9 A. M.

SECOND DAY—MORNING SESSION.

APRIL 20, 1893.

The Association was called to order at 9 A. M. by the President.

Dr. W. H. Elliott, of Savannah, addressed the Association on "Elastic Constriction," it being a review of Dr. Senn's views on the subject.

Discussed by Dr. McHatton.

Dr. O. H. Buford, of Cartersville, read a paper entitled "A Rare Case in Obstetric Practice."

Discussed by Dr. Williams.

Dr. J. G. Hopkins read the following resolution, which came from the Board of Censors.

WHEREAS, It has come to our knowledge that it is the habit of some of the members of this Association to either allow or cause their professional cards to be placed upon the room doors of hotels and in other public places, and permit or cause the insertion in the daily prints extravagant notices of their surgical operations, wonderful skill, guaranteeing of cures, etc.; therefore be it

***Resolved*, That it is the sense of the Board of Censors that such procedure savors of quackery, is unbecoming the dignity of the profession, is in violation of the spirit of the Code of Ethics, is highly reprehensible, and that henceforth the board will deem it a bounden duty to deal with such violations accordingly.**

(Signed) W. O'DANIEL,
H. MCHATTON,
J. G. HOPKINS,
R. O. ENGRAM,
A. C. BLAIN.

After being discussed by Drs. Blain, McIntosh, Darby and McHatton, was adopted.

Dr. W. P. Williams, of Blackshear, read a paper entitled "Persistent Remittent, or So-Called Typho-Malarial Fever."

Discussed by Dr. Hopkins, and, in closing, by the essayist.

Dr. M. L. Currie, of Mount Vernon, followed with a paper on "Periproctitis, with a Report of Cases."

Discussed by Dr. McRae, and, in closing, by the essayist.

Dr. R. R. Kime, of Atlanta, read a paper on "Ectopic Pregnancy, its Pathology, Symptoms and Treatment."

The following three papers were read and discussed jointly:

"The Necessity for a Medical Examining Board in Georgia," by Dr. Luther B. Grandy of Atlanta: "The Practice of Medicine in Georgia," by Dr. A. C. Blain of Macon; "State and Municipal Hygiene," by Dr. J. C. Avary of Atlanta.

The above papers were then discussed by Drs. Hurt, Engram, Westmoreland, Elliott, McRae and Hutchins.

Dr. E. C. Goodrich then submitted his report as Treasurer, as follows:

To the Medical Association of Georgia:

GENTLEMEN—I herewith submit my report for the year closing with this meeting:

DR.

To balance in treasury as per last report	$ 994 68
To amount (dues) received during year	656 00
To amount received from new members	305 00
	$1,955 68

CR.

By amount paid out as per vouchers accompanying	$ 1,146 10
Leaving balance in treasury	$809 58

Respectfully submitted.

E. C. GOODRICH, Treasurer.

On motion, the report was adopted and referred to an Auditing Committee consisting of Drs. William O'Daniel, Engram and McHatton.

On motion, the Association adjourned until 2.30 P. M.

SECOND DAY—AFTERNOON SESSION.

The Association reassembled at 2.30 P. M., and was called to order by the President.

The Chair called for reports from Standing Committees. Secretary Howell stated that the Chairman of the respective Committees on Publication, Necrology, and on Prize Essays were absent.

On motion of the Secretary, visiting physicians from Alabama and elsewhere were accorded the privileges of the floor.

The President then called for the reading of the report of the Secretary, which was read, and on motion, adopted and referred to the Auditing Committee.

The report is as follows:

To the Medical Association of Georgia:

GENTLEMEN—In submitting my annual report for the year ending April 19, 1893, I desire to state that at the meeting in Columbus, April, 1892, the Auditing Committee recommended a change concerning the method of payments of bills incurred by the Association. This method has been adopted by the Treasurer and Secretary. This change makes it unnecessary for me to make a report, as the Treasurer is in possession of all vouchers which were formerly in my hands.

I received from Treasurer		$ 606 90
Paid out for publishing 400 transactions 1892 . . .	$539 25	
Postage for transactions and correspondence during the year (as per vouchers in Treasurer's hands)	67 65	$606 90

The President requested that a member from each county send his name and county to the Secretary in order to be represented on the Nominating Committee.

Dr. Willis F. Westmoreland, of Atlanta, then offered the following, which, on motion, was adopted, after discussion participated in by Drs. Engram, Gaston and Richardson:

Resolved, That sections 11 and 15 of the By-Laws, referring to the Nominating Committee, be stricken out and that in their places be inserted the following: "That the officers of the Association be elected by ballot without a nomination on the morning of the last day of the Association; and that a majority of those voting shall be necessary to an election."

Dr. C. D. Hurt, of Atlanta, read a paper entitled "Puerperal Eclampsia—Its Treatment, with a Report of Some Typical Cases."

Dr. H. McHatton, of Macon, contributed a paper on "Four Women Who Refused Oöphorectomy and Their Subsequent Histories."

Discussed by Dr. Stewart, and, in closing, by the essayist.

Dr. T. M. McIntosh, of Thomasville, read a paper with the caption, "Some Remarks on Antiseptic Surgery, with Demonstrations of Sterilizing Methods."

Dr. C. H. Peete, of Macon, read a paper on "Partial Tenotomy, a Radical Cure for Heterophoralgia."

Dr. F. W. McRae, of Atlanta, read a paper entitled "Stone in the Bladder, with Report of Cases."

Discussed by Dr. McIntosh.

Dr. W. R. Googe, of Abbeville, followed with a paper on "Fracture of the Skull, with Protrusion of the Brain Substance."

Discussed by Drs. McRae, Gaston, Hopkins, Cox and Hurt.

On motion, the Association adjourned until Friday morning at 9 o'clock.

THIRD DAY—MORNING SESSION.

APRIL 21, 1893.

The Association was called to order at 9 A. M. by the President.

The first paper read was by Dr. J. B. S. Holmes, of Rome, entitled "The Technique and After-Treatment of Ovariotomy."

Discussed by Drs. Hardon, Stewart, Kime, Moore, Cox, Hopkins, and, in closing, by the essayist.

Dr. Wm. O'Daniel, Chairman of the Auditing Committee, made the following report:

GENTLEMEN—We, the undersigned committee, appointed to examine the books of the Secretary and Treasurer, find the proper vouchers and the books correctly and neatly kept, and a balance of $809.48 now in the hands of the Treasurer.

We recommend that the Treasurer be paid an *honorarium* of $100 and expenses in attending this meeting of the Medical Association of Georgia, and that the Secretary be paid $230, he paying the stenographer of this meeting.

W. O'DANIEL, Chairman,
H. MCHATTON,
R. O. ENGRAM,
Auditing Committee.

The following letter of resignation was read:

To the Medical Association of Georgia:

GENTLEMEN—I herewith tender my resignation as Treasurer of the Association. Respectfully,

E. C. GOODRICH, Treasurer.

Dr. K. P. Moore, of Macon, said that Dr. Goodrich had served the Association faithfully and efficiently as Treasurer, and he hoped Dr. Goodrich would withdraw his resignation. After some discussion, Dr. Goodrich did so.

Dr. F. W. McRae moved that the Association proceed to the election of officers.

Seconded and carried.

The election of officers was proceeded with, and the following were elected for the ensuing year:

President, Dr. W. H. Elliott, Savannah.

First Vice-President, Dr. G. T. Miller, Americus.

Second Vice-President, Dr. H. McHatton, Macon.

Secretary, Dr. Dan. H. Howell, Atlanta.

Treasurer, Dr. E. C. Goodrich, Augusta.

Censors, Drs. C. D. Hurt, Atlanta, and R. O. Engram, Montezuma.

After invitations by Drs. McRae, Gaston and Hardon, the Association decided to hold its next annual meeting in Atlanta.

Considerable discussion arose as to whether Secretary Howell was elected for five years from the date of his election, or whether he was elected to fill the unexpired term of the previous Secretary of the Association, and the President decided that the former was right.

The President announced the following as the Committee on Legislation:

Third District—Dr. R. O. Engram, Chairman.

First District—Dr. R. J. Nunn.

Second District—Dr. T. M. McIntosh.

Fourth District—Dr. W. L. Bullard.

Fifth District—Dr. J. McFadden Gaston.

Sixth District—Dr. Mark H. O'Daniel.

Seventh District—Dr. J. B. S. Holmes.

Eighth District—Dr. S. C. Benedict.

Ninth District—Dr. W. B. Tate.

Tenth District—Dr. E. C. Goodrich.

Eleventh District—Dr. J. A. Dunwoody.

The President then introduced Dr. Frank M. Ridley, of LaGrange, who delivered the orator's address. Dr. Ridley chose for his theme "Woman's Relations to the Practice of

Medicine." The speaker held the closest attention of his audience by the eloquent and masterly manner in which he handled his subject. The address frequently elicited applause during its delivery.

At the conclusion of Dr. Ridley's address the Association adjourned until 2:30 P. M.

The banquet tendered the Association by the physicians and citizens of Americus the previous evening was largely attended, the dining room of the Windsor Hotel being taxed to its utmost capacity. Musical selections were rendered by a local orchestra. Dr. Dan H. Howell, of Atlanta, acted as toastmaster.

The following is a list of the toasts and speakers:

"The Medical Association of Georgia," by Dr. A. A. Smith.

"Professional Courtesy," by Dr. K. P. Moore.

"City of Americus," by Mr. George D. Wheatley.

"The Triumphs of Modern Surgery," by Dr. J. McFadden Gaston.

"The Law," by Judge W. B. Guerry.

"The Physician Himself," by Dr. F. W. McRae.

"The Press," by Dr. W. P. Burt.

"Woman," by Dr. R. E. L. Barnum.

"Our Country," by Hon. Chas. F. Crisp.

"Our Host," by Dr. T. M. McIntosh.

THIRD DAY—AFTERNOON SESSION.

The Association reassembled at 2:30 P. M., and was called to order by the President.

The Board of Censors reported favorably on the following names for membership during the sessions, and they were duly elected:

A. H. Crawford,	J. H. Winchester,	J. S. Sullivan,
J. H. Ridding,	C. H. Smith,	Wm. L. Davis,
B. F. Smith,	John F. Powell,	Jeff Davis,
W. S. Goldsmith,	John G. Croley,	W. C. Maloy,
R. D. McLeod,	Henry S. Munro,	James H. McDuffie,
R. E. Cato,	F. L. Cato,	John S. Wimberly,
Geo. Horine,	T. S. Jones,	W. T. Rogers,
A. B. McRae,	J. D. Tyson,	R. T. Dozier,
F. A. Thomas,	O. G. Cranford,	B. T. Wise,
J. I. Darby,	P. A. McIntosh,	T. R. Garlington,
G. W. Blanton,	C. H. Peete,	W. W. Terrell,
Geo. M. Niles,	M. A. Clarke,	J. F. Scarborough,
R. T. Bivins,	J. M. Horrocks,	John R. Shannon,
E. A. Harris,	E. P. Rose,	Henry R. Slack,
R. A. Mallory,	C. T. Quinn,	C. D. McRae,
L. M. Johnson,	W. C. Sessoms,	E. A. Winchester,
James H. Shorter,	C. C. Whelchel,	A. H. Black.
L. B. Grandy,	William B. Gilmer,	

Dr. R. E. Griggs, of Columbus, moved the appointment of a committee of one member of the Association from each congressional district to urge members of the legislature to enact proper measures for the improvement of accommodations for the lunatic and inebriate asylum.

Seconded.

The resolution was discussed by Drs. Westmoreland, Whittaker, Elliott and Mark O'Daniel, and carried.

The President appointed on this committee the following members:

Fourth District—R. E. Griggs, Chairman.
First District—M. L. Boyd,
Second District—P. L. Hilsman.
Third District—J. D. Herrman.
Fifth District—W. F. Westmoreland.
Sixth District—K. P. Moore.

Seventh District—F. R. Calhoun.
Eighth District—John Gerdine.
Ninth District—T. D. McKown.
Tenth District—H. B. McMaster.
Eleventh District—M. L. Currie.

The following papers were read by title:

1. Headache Versus Glaucoma. By Dr. W. L. Bullard, Columbus.

2. Puerperal Eclampsia, with Especial Reference to its Cause and Treatment. By Dr. A. C. Davidson, Sharon.

3. Typhoid Fever. By N. M. Darden, Norwood.

4. Non-Surgical Treatment of Typhlitis. By Dr. E. H. Richardson, Atlanta.

5. Asphyxia Neophytorum. By Dr. R. J. Nunn, Savannah.

6. Stab of the Stomach, the Organ Protruding through Abdominal Wall—Laparotomy—Recovery. By Dr. J. W. Griggs, West Point.

7. Ophthalmia of the New Born. By Dr. S. Latimer Phillips, Savannah.

8. Drainage and Pelvic Surgery. By Dr. Geo. H. Noble, Atlanta.

9. Operation for Fistula in Ano by Ligation. By Dr. John J. Hill, Washington.

10. Report of Eleven Hundred Operations for Strabismus and Some Remarks upon the Same. By Dr. A. W. Calhoun, Atlanta.

11. Conditions Indicating Abdominal Operation and Report of Cases. By Dr. Frank M. Ridley, LaGrange.

12. Pneumonia. By Dr. O. T. Kenyon, Weston.

13. The Functions and Nutritive Value of Foods. By Dr. Louis H. Jones, Atlanta.

14. Ante and Retro-positions; Their Pathology, Symptomatology, Etiology and Treatment. By Dr. W. W. Stewart, Columbus.

15. The Disappointments of the Menopause. By Dr. J. C. Avary, Atlanta.

16. Injury to Foot, Ligation of Anterior and Posterior Tibial Arteries. By Dr. W. B. Tate, Tate.

17. Two Rare Cases in Practice. By Dr. P. L. Hilsman, Albany.

18. A Case of Aneurism of the Thoracic Aorta. By Dr. N. P. Jelks, Hawkinsville.

19. Mechanical Treatment of Some Skin Anomalies. By Dr. M. B. Hutchins, Atlanta.

20. The Treatment of Some of the Most Common Forms of Pelvic Congestion in the Female. By Dr. W. A. Crow, West End.

21. Toxic Amblyopia. By Dr. James H. Shorter, Macon.

22. Diffuse Traumatic Aneurism, of Anterior Tibial Artery—Ligation of Femoral. By Dr. F. R. Calhoun, Cartersville.

23. Specialism in Medicine. By Dr. A. S. Hawes, Atlanta.

24. Cases of Perityphlitic Abscess. By Dr. C. J. Carter, Lake Park.

25. Sterility in the Male. By Dr. C. Evans Johnson, Atlanta.

26. Antipyretics, translated from the German, of a paper read before the National Medical Congress of Berlin, by Cantani—Translation made by myself. By Dr. S. B. Poland, Griswoldville.

27. Continuous Decoloration in Pyrexias. By Dr. A. B. Simmons, Savannah.

President Smith announced the following gentlemen as delegates to the American Medical Association, June 6–9, 1893:

J. W. Bailey,	Wm. Duncan,	W.F.Westmoreland
G. W. Mulligan,	C. H. Colding,	W. L. Bullard,
Wm. O'Daniel,	H. J. Williams,	W. F. Holt,
J. I. Darby,	M. A. Clark,	K. P. Moore,
G. T. Miller,	A. W. Calhoun,	J. G. Hopkins,
J. B. S. Holmes,	J. B. Baird,	C. D. Hurt,
R. H. Taylor,	J. McF. Gaston,	R. O. Engram,
N. P. Jelks,	A. G. Whitehead,	A. W. Griggs,
F. M. Ridley,	P. L. Hilsman,	T. O. Powell,
F. W. McRae,	W. W. Stewart,	W. H. Elliott,
R. J. Nunn,	J. F. Lancaster,	J. D. Herrman.
H. McHatton,		

Dr. J. G. Hopkins offered the following amendment to the Constitution:

Resolved, That that part of the Constitution numbering the officers of the Association be changed so as to read: "First, one President; second, two Vice-Presidents; third, one Secretary and Treasurer; fourth, five Censors.

Resolved further, That all laws in conflict therewith be and are hereby repealed.

Resolved further, That the laws changed by this resolution shall go into effect immediately upon its adoption.

Laid over for one year.

INSTALLATION OF NEWLY ELECTED OFFICERS.

President Smith, in introducing his successor, said:

GENTLEMEN—I have the honor and pleasure to introduce to you Dr. W. H. Elliott, of Savannah, who is your President-elect for the ensuing year. It is useless for me to add any words of merit or comment regarding Dr. Elliott, as he is well and favorably known not only to the Medical Association of Georgia, but to the profession at large.

Dr. Elliott was very warmly received on taking the chair. He said:

GENTLEMEN—I thank you for the distinguished honor you have conferred upon me. I am proud to occupy the chair that has been filled by Dr. Smith and other members of this Association who have gone before him. The character of this meeting has been such as to reflect credit both on the profession and the Association, and I can only hope to do as well as those who have set me an example.

Dr. Mark H. O'Daniel, of Macon, offered the following resolution:

Resolved, That we, the Medical Association of Georgia, do most heartily and sincerely express to the medical profession of Americus and Sumter county, as well as to her citizens generally, our warmest and most profound thanks for the cordial welcome and kind and courteous manner in which we have been entertained; also to her fair and beautiful women for the attention they have shown us. We desire, furthermore, to thank the press of Americus and of the State for their recognition of our Convention.

The President then appointed the following Standing Committees:

COMMITTEE ON PUBLICATION.—A. W. Calhoun, Chairman; D. H. Howell, E. C Goodrich, W. P. Nicolson, F. W. McRae, L. H. Jones.

COMMITTEE ON NECROLOGY.—K. P. Moore, Chairman; H. J. Williams, W. H. Doughty, Jr., W. W. Owens.

COMMITTEE ON PRIZE ESSAYS.—M. H. O'Daniel, Chairman; C. H. Richardson, T. O. Powell, J. M. Whittaker.

COMMITTEE ON PROGRAMME.—C. D. Hurt, Chairman; R. P. Cox, F. R. Wright, R. H. Taylor, W. W. Stewart, M. B. Hutchins.

COMMITTEE ON CORRESPONDENCE FOR NEW MEMBERS.—C. A. Brooks, Chairman; Hugh Buford, G. P. Folks, N. P. Jelks, H. B. McMaster.

COMMITTEE OF ARRANGEMENTS.—W. F. Westmoreland, Chairman; W. S. Elkin, W. S. Kendrick, W. C. Jarnagin, Louis H. Jones.

ORATOR.—S. C. Benedict. Athens.

The following members were present:

T. O. Powell,	M. A. Baldwin,	H. A. Wall,
W. O'Daniel,	F. W. McRae,	V. P. Stevens,
R. O. Engram,	O. G. Singleton,	C. H. Richardson,
A. C. Blain,	W. J. Mathews,	S. B. Poland,
R. B. Barron,	R. R. Kime,	G. C. Trimble,
H. McHatton,	J. McF. Gaston,	W. C. Humphries,
J. M. Whitaker,	K. P. Moore,	L. G. Hardman,
Ross P. Cox,	J. R. Henderson,	R. T. Dozier,
John A. Callaway,	R. H. Taylor,	V. O. Hardon,
W. L. Fitts,	R. C. Goolsby,	L. B. Grandy,
H. D. Allen,	M. L. Currie,	W.F.Westmoreland
D. H. Howell,	G. W. Blanton,	J. H. McDuffie,
W. S. Goldsmith,	T. S. Jones,	F. D. Patterson,
M. H. O'Daniel,	J. T. Van Horne,	W. W. Terrell,
J. K. Maloy,	H. A. Mobley,	E. A. Winchester,
W. H. Elliott,	W. B. Standifer,	J. F. Powell,
W. R. Googe,	J. E. Douglass,	C. D. McRae,
M. P. Deadwyler,	J. C. Avary,	A. H. Black,
A. J. Logan,	J. B. S. Holmes,	R. E. Cato,
J. M. Head,	W. L. Bullard,	W. T. Rogers,
W. F. Sibbett,	C. D. Hurt,	W. C. Maloy,
G. S. Miller,	J. S. Sullivan,	J. L. Wimberly,
W. W. Stewart,	C. M. McDonald,	J. R. Shannon,
E. K. Bozeman,	O. H. Buford,	J. C. Fields,
R. T. Kendrick,	P. A. McIntosh,	J. F. Cato,
W. P. Williams,	H. S. Munro,	W. F. Crumley,
M. B. Hutchins,	C. H. Smith,	J. F. Scarborough,
E. C. Goodrich,	A. B. McRae,	R. E. L. Barnum,
R. A. Mallory,	E. A. Harris,	R. E. Griggs,
L. M. Johnson,	C. H. Peete,	J. H. Shorter,

C. C. Hart,	E. P. Rose,	B. C. Sims,
J. G. Hopkins,	C. T. Quinn,	Wm. B. Gilmer,
J. I. Darby,	W. C. Sessoms,	A. H. Crawford,
J. H. Winchester,	J. D. Tyson,	J. H. Ridding,
George Horine,	W. L. Davis,	B. F. Smith,
R. D. McLeod,	T. R. Garlington,	Geo. M. Niles,
T. M. McIntosh,	Jeff Davis,	R. T. Bivins,
A. P. Taylor,	C. C. Whelchel,	John G. Croley,
P. H. Thompson,	F. A. Thomas,	M. A. Clark,
P. H. Keaton,	L. M. McLendon,	B. T. Wise.

There being no further business, the Association, on motion, adjourned to meet in Atlanta on the third Wednesday in April, 1894.

W. H. ELLIOTT, M. D.,
President.

DAN. H. HOWELL, M. D.,
Secretary.

ANNUAL ADDRESS.

BY A. A. SMITH, M. D., AMERICUS, GA.

Gentlemen of the Medical Association of Georgia:

In assuming my duties as your presiding officer on this occasion, your constitution, as well as a time-honored custom, makes it my duty to address you upon some subject having for its purpose the best interests of our Association, as well as the profession at large.

Let me assure you that no one feels more keenly than I my inability to meet the expectations of the hour. Indeed, I would be constrained to omit this part of our programme altogether, did I not know that the same kindness and courtesy which invited my effort will take great pleasure in throwing the mantle of charity around its defects.

Standing, as I do to-day, in this magnificent presence, composed as it is of the best medical skill and talent in the State of Georgia, believe me when I assure you, that inexperienced as I am, yet deep thrills my soul with joy and high throbs my heart with pride and satisfaction.

I love the Association—its objects and its aims. I love my profession, and believe it to be the grandest and noblest on earth. I love to hear the gifted sons of medical science and art, in business convocation assembled, discuss the best methods and means that can be employed for the relief of human pain and the prolongation of human life.

It is with a heart filled with these feelings that I approach you to-day and beg your kindest indulgence while I try to

make a few running comments upon some of the general questions pertaining to our profession. And may the Great Physician above guide me with his wisdom and give me the power and the language to say something that will hold your attention and redound to the advancement of our high calling.

Our Association is standing to-day on the threshold of her forty-fourth anniversary. The flowers of forty-four springs have bloomed and faded since she first saw the light. During that period the vicissitudes of peace and war have swept over our land. At one time plenty and prosperity would be within our walls; at another time ruin and death would hold high carnival in our midst; yet, amid all these changes, our Association has never halted, but has grown stronger and stronger, and brighter and brighter in its onward and upward march, until it stands to-day on Georgia soil a relic of the splendid medical achievements of the past, and a memento of the wonderful achievements yet to come.

During these forty-four years of change and mutation, science has breathed upon every art, industry and avocation known to man, until the beacon lights of progress are blazing on every hill, and glowing in every valley. The farmer makes two bales of cotton where before he made but one. The manufacturer has doubled the output of his factory until he has made himself a millionaire. The long, heavily laden freight trains of commerce traverse our country from center to circumference; while the splendid rolling palaces, adorned with every beauty and provided with every comfort, rush with the speed of a "Nancy Hanks" from ocean to ocean, and from lake to gulf; and when the railroads come to halt her magnificent ships take up and carry on the transportation on every river and on every ocean on the face of the globe. Thought thrills on electric wings, and light flashes from electric sources.

While agriculture, manufactures and commerce have made such marvelous progress, the medical profession has not been at a standstill. Her place is at the top and in the front of every move undertaken for the support and relief of suffering humanity.

During the last forty-four years the origin and causes of diseases have been more thoroughly investigated and more accurately understood, and the mode of their treatment and the remedies for their removal have been improved to such an extent that there is scarcely a disease known but what can be cured, or a pain felt but what can be eradicated. We have made wonderful progress in carrying out our high mission of establishing ease in the place of pain, health in the place of disease, symmetry in the place of deformity, and life in the place of death.

While we have made such wonderful progress during this period of time, let us not forget that the field in which we labor is wide and unbounded, and that the harvests to be gathered therefrom in the future will be far greater than any that have ever been garnered in the past. We have every reason to believe that such will be the result. Who knows what the future has in store for us? It may be that medical science will not have reached the acme of its earthly career until disease and death have been annihilated, and health and life shall hold undisputed dominion on earth, even as they do fast by the throne of God. Let the results of the past, the realities of the present and the anticipations of the future nerve our arms, enthuse our souls and inspire our hearts. Now, while the dazzling splendor of science is beating upon our brows and making our pathway bright, let us labor on and toil on with a zeal that knows no flagging, until we shall have carried our profession to the very summit of human achievement. It may be, as we go marching on through the fields of the future from one triumph to another, the Great Physician himself will meet us in the twi-

light of some still evening, or the dawn of some bright morning, and crown our work with absolute perfection.

Permit me now to pass from the absolute perfection hoped for to the business part of our profession. I allude to the collection of fees. "The laborer is worthy of his hire." This proposition was laid down by our divine Master nearly two thousand years ago, while engaged in the land of Caanan in healing the sick and raising the dead. He promulgated it then for future practice, and future enforcement. Born in the depths of his wisdom, it was strong when it first fell from his lips, and the lapse of twenty centuries has only served to make plain its strength, and more important its utility. I care not what the natural endowments, or the artificial acquirements of a physician may be, his professional life will be a failure unless the principle that, "the laborer is worthy of his hire," has found lodgement in his brain, and enforcement in his practice. He may have the endowments of old Esculapius himself, the skill of a Westmoreland, or the talent of a Calhoun, yet, success will not perch upon his banner, unless he collects his fees. While every physician should do his part of the charity practice in his community, yet, at the same time, he should look well to the collection of his fees. The standing of himself and family, as well as the honor and dignity of the profession, demand it. A profession which, in my judgment, leads all others in grandeur, nobility and importance should not be satisfied with less.

Many worthy physicians of the highest order of talent make a perfect failure in life, and finally die penniless, leaving their families in abject poverty and want, by neglecting to closely and promptly collect their fees. And when a physician or any other man does this he is denounced by Holy Writ as being worse than an infidel.

A moneyless man is regarded as a small institution the world over. This I know from observation as well as ex-

perience. Search the wide world wherever you can, there is no open door for a moneyless man. Let him go to the banquet, where wealth and beauty have arrayed themselves, and there is no one to welcome him. Let him go into the courts, and he will find there is no law for his cause.

> "Let him go to the bank where Mammon has told
> His hundreds and thousands of silver and gold,
> Step up to the counter—ah, there he may stay
> Till his limbs have grown old, and his hair has turned grey,
> And he will find in the bank not one of the clan,
> With money to lend to a moneyless man."

Therefore, let me impress upon you the principle, that the laborer is worthy of his hire, and then let me furthermore assure you in the language of Robert Burns,

> "To catch Dame Fortune's golden smile
> Assiduous wait upon her,
> And gather gear by every wile
> That's justified by honor.
> Not for to hide it in a hedge,
> Nor for a train attendant,
> But for the glorious privilege
> Of being independent."

Georgia is justly styled "the Empire State of the South." She has her boards of education, her boards of trade, and her various other boards, but she has no board of health. The sanitary condition of her two million inhabitants, dwelling within the borders of one hundred and thirty-seven counties, should be looked after and cared for in an official way; and a board of health, composed of the best medical talent in the State should be established for that purpose. Education and trade are important in their places, but when compared with the health of a people, they are but as a sounding brass or tinkling cymbal. I know of nothing that would be more conducive to the protection of the general health and prosperity of our people than the per-

manent establishment of a State Board of Health. I regret to say that our sister States have outstripped us in this respect, and have left Georgia in the rear, when her proper place is in the front.

Therefore, as a profession, let us take vigorous hold of this matter, and never cease our efforts until a first-class State Board of Health is permanently established within our borders.

Again, I would earnestly recommend the permanent establishment of a State Board of Examination, and no one should be allowed to practice medicine within the borders of our State, until he shall have passed a rigid and satisfactory examination under this board, and received therefrom a certificate of proficiency. This would drive away quacks and empirics, and thereby not only protect the health and the lives of the people, but also the honor and the dignity of the profession. If I am not mistaken, the matter I now have under consideration was agitated by the General Assembly of Georgia at its last session. I also most heartily indorse any measure, or measures, that may be adopted by our legislature for the hygienic welfare of our people and the honor and advancement of our profession.

Another point to which I would respectfully invite your consideration is, that the curriculum of our medical institutions should be raised to a higher standard. Nothing less than the three course system should be tolerated, and each one of these courses should be made broader, deeper and more comprehensive.

With a State Board of Health, and a State Board of Examination permanently established, and the curriculum of our medical schools raised to a higher standard, we would greatly accelerate the onward and upward progress of our cause; and as it moved onward and upward, higher and higher, mantled with the glory of its past, and crowned

with the splendor of its future, God's truth would bloom upon its brow, and God's approbation rest upon its work.

Permit me now to thank the citizens of Americus for the kind treatment we have met with at their hands. Her men are handsome and manly; her women beautiful and cultured, charming and irresistible; may health, plenty and prosperity ever be with them as a benediction, fresh from the hand of God.

And now, gentlemen of the Association, from the bottom of my heart, allow me to thank you for the high honor that you have conferred upon me in electing me as the President of this convention. I trust that it will always be to me a strong incentive to future exertion. I know that it will ever remain and linger with me and mine as a sweet and happy recollection. With my best wishes for your future happiness and success, and hoping that our deliberations will be harmonious and profitable, I will now announce that the Association is open and ready for the transaction of business.

CONTAGIOUSNESS OF CONSUMPTION.

BY J. G. HOPKINS, M. D., THOMASVILLE, GA.

The question as to whether consumption is contagious or not is one of vital importance to posterity as well as to the present generation. While the theory of Koch is becoming generally accepted, there are still many who are skeptical upon the subject. These septics, in a great measure, are confined to those who have not given the work of Koch and his collaborators much of their time or attention. They look upon the bacillus as skeptic or putrefactive rather than pathogenic. I have joined that growing army which places tuberculosis in the category of contagious diseases, and my experience with this disease, during nineteen years of investigation in Thomasville, which place is a resort for consumptives, bears me out in my opinion and makes me a willing subject of the great and erudite Koch.

I do not intend, in this article, to delve into the depths of science by entering into *minutiæ*, but simply to deal with facts as we find them.

We will take, to begin with, the negro, a creature in whom, prior to and during the war between the States, consumption was unheard of. In those days he was properly fed, properly clad, kept out of doors in the daytime, was never crowded, and rest at night was compulsory. This process kept him, as far as possible, up to the "norm," and he was better enabled to wrestle with such disease germs as may have invaded his person. There is a vast contrast between then and now; his environments are materially changed, as any resident of or sojourner in the South can

testify. It is a well known fact, as shown by the records of our sexton, that more negroes die of consumption in Thomasville since the place has been a resort than ever before, and we find also that most of those who die of it have been at some time or other connected with some hotel or boarding-house in the capacity of chamber-maid, laundress, or some other, which exposed them more than others to the invasion of the tubercle bacillus. It is true that the whites escape to a far greater extent than the blacks, but it is also true that they are not as intimately connected with these subjects, and it is a well known fact that the whites possess far greater powers of resisting disease than the negro, except those of malaria and syphilis. We see this exemplified more particularly in diseases of the air passages. The percentage of recovery from pneumonia is so small that it is rare for a negro to recover from a severe case of the disease.

Frequently we find that the wife of a consumptive husband, or *vice versa*, comes down also with consumption, and dies as did the loved companion of life. Many instances of this character could be mentioned in which it was impossible to trace any family taint whatever in the subject last to succumb to the disease, the one evidently contracting it from the other. We may and do inherit color of hair, eyes and many family characteristics, and we do also inherit conditions of lungs and throats which supply proper pabulum for sustenance and afford ample culture fields for the propagation of the tubercle bacillus, hence we frequently find that more than one member of the same family dies of consumption.

I do not doubt but that all men, women and children at some time or times receive into their air passages the tubercle bacilli, but fortunately the great majority possess the power of repelling them and throwing them off. They do not

find that soil, so to speak, which is adapted to their growth. As we find in our fields soil within which certain grain will germinate and reproduce its kind, and others again upon which the same grain would fail to germinate, or if it did germinate would spring up but to wither and die for want of sustenance just so we find birds, quadrupeds and persons in whom the tubercle bacillus will find ample conditions for its reproduction; others in whom this pabulum is entirely wanting; and others again in whom it is so scantily found that the bacillus, after struggling for existence for a time, is cast off, leaving the subject to regain as good health as before the invasion.

Most of the caged animals die of consumption, and the anti-contagonist would say it is because of environment. I admit that environment plays a conspicuous part in the propagation of this disease, but numerous experiments upon animals have shown conclusively that there must be more than this. Trudeau subjected a number of rabbits to similar conditions, those of confinement in damp dark places, scanty sustenance, etc., half of which number he inoculated with tubercle bacilli, and separated them from the rest; within four months all of those inoculated but one had died of consumption, and this one being killed was found to have a well developed case of it. At the expiration of the fourth month all of those not inoculated were killed, not one having died, and the most searching autopsy failed to reveal the slightest evidence of disease in a single one of them. The same number of inoculated rabbits were now turned loose on an island; they were in their native element and well fed; freedom, sunlight and all conditions conducive to health were provided. Only one of them died of consumption, while at the end of four months the remainder were by autopsy proven to be in a state of perfect physical condition.

Animals confined in museums are not only subjected to

an unnatural life, but to the filth and foul odors of their cages, the dampness resulting from washing out these cages and exclusion of sunlight, all of which are strong factors in lowering vital energy, but are hourly exposed to the tubercle bacilli, which are spat about the building and often even in the cages themselves by the consumptive spectator, who unwittingly scatters these germs of destruction broadcast as he passes by with the eager throng of lookers on. One animal may yield to the invasion, and it is not discovered until he has impregnated that cage with germs enough to destroy every animal ever put into it, for they are passed from one to another and will be throughout eternity, unless proper action can be taken to prevent it. These creatures in their native state never die of consumption. Roaming the wilds at will, with no shelter but the broad canopy of heaven, and warmed into animation by the glorious sunlight, that mighty destroyer of germ life, they are placed beyond the ravages of the tubercle bacillus. Just so it is with the higher order of animals.

Indians in a state of nativity seem impervious to the germs of consumption, but are now dying by thousands on the reservations. The whites and the blacks in prisons and asylums all over the world labor under similar conditions. A report from the Illinois State Prison at Jolliet says:

"There are fourteen hundred convicts within the walls, and fully one-third of them have consumption in a light or bad form. Nearly all deaths of persons in the penitentiary have been caused by consumption, and as a rule, all long termers either die within the walls from the disease or are pardoned out on account of it." The percentage of mortality from consumption at the Georgia Lunatic Asylum is 39 63-76 per cent.; and in other asylums and prisons it is much the same. In States where the "farming" system with convicts exists, this condition of things does not

obtain. Statistics from the Georgia convict camps collected and published by my father, Dr. T. S. Hopkins, show that out of 2,803 convicts farmed out in various sections of the State between October 1st, 1890, and October 1st, 1892, covering a period of two years, there were only nineteen deaths from consumption, making a morality of 3 63-100 per cent. Now being in possession of these facts, convincing as they are, that environment plays a prominent part in the propagation of the disease, is there wisdom in congregating those already diseased or herding together the sick and the well? There is no doubt, in my mind, that danger lurks in sleeping cars, in carpets, bedding, clothing and in the walls of apartments occupied by consumptives, which have not been properly renovated and rendered innocuous by antiseptic measures, and if it were not for the fact, as I believe, that the direct rays of the sun will destroy these bacilli the inhabitants of consumptive resorts would be in far greater danger than they are from the myriads of them that are daily spat upon the streets. It is a known fact that the more nearly we approach the original man in our habits of life, the more exempt we are from disease; hence it is apparent that isolation in the cottage system in a section of country as nearly "aseptic, because it is antiseptic," as we can find, coupled with an observance of antiseptic laws, will afford the most fruitful source of relief to the pulmonary invalid, and do most toward preventing contagion.

Hundreds of years have been spent in searching for a remedy which would successfully baffle this fell destroyer, whose ruthless clutches drag annually from America to eternity one hundred thousand souls, and still the search goes on. Each year serves but to convince us more fully that from drugs but little can be expected, and we can but continue, as has been done ever since the beginning of the art of medicine, to try the efficacy of climate. Ever since

the days of Hippocrates consumptives have been sent to the pine forests, as they are to-day. That the bacillus is often rendered inactive, and an arrest in the progress of the disease induced by a sojourn in these pine sections, is evidenced by ample proof, but how much more could we expect if these cases were scattered through the country in cottages rather than massed in the cities and towns in crowded hotels, where they are dependent, for a part of the time at least, upon oxygen abstracted from air polluted by excretions and exhalations from the bodies of other invalids, and they themselves adding to the fruitful source of contamination.

Consumptives should be forced to provide for the destruction of sputa. Whenever situated so as not to expectorate directly into a germicide or the fire, they should use some means of conveying the sputa to the germicide or the flames. If handkerchiefs or clothes be used they should not be sent to the laundry, as human happiness and life are jeopardized through the probability of inoculation through abrasions upon the hands. These bacilli should never be allowed to dry up and impregnate the air, as is now done through ignorance of possible result. Numerous experiments by leading medical authorities have proven beyond doubt that consumption is an inoculable disease, and so rapidly is the throng of converts growing that I would not be surprised if, even in my day, resorts now soliciting the patronage of the consumptive should be quarantining against him.

DISCUSSION ON DR. HOPKINS' PAPER.

Dr. R. P. Cox, of Rome, opening the discussion: I have been very much interested in Dr. Hopkins' paper. I read an article a short time ago in which a German authority claimed that bedbugs were a very common source for carrying the bacillus of tuberculosis. When we consider

the wide distribution of the bedbug, we can readily see how reasonable such a theory is, and especially in beds on sleeping cars, steamers and in hotels. An important point in connection with the development of tuberculosis is being shut out from sunlight. I can give an illustration in point: While I was an interne in a hospital in one of our large cities, there were a great many Sisters of Mercy acting as nurses, etc., who rarely went out in the sunlight, and who had very little fresh air. I may safely say that eight-tenths of those persons die of tuberculosis. Another point of interest, confirming the observation of others, is the predisposition and lessened resistance of the mulatto to tuberculosis. In the vicinity of Rome we have considerable tuberculosis, very often in the form of cold, abscesses, white swellings, spinal troubles, as well as affections of the lungs, confined to a very noticeable degree to this class. With them, also, the fatal progress of this disease seems surer and swifter.

Dr. Willis Westmoreland, of Atlanta: Too much cannot be said in discussing this very important and interesting subject. I do not think we have hereditary transmission of tuberculosis; the thing we do have is a predisposition to the disease in the way of soil which will be easily inoculated, and for that reason the further we can prevent the contagiousness of the disease, either by sanitary laws or hygienic conditions, so much do we cut off the trouble we have to deal with. Even though a patient may not become generally infected by a particular lesion, I have noticed that some persons seem to have a predisposition toward the development of the disease. A certain nucleus may be infected, although the lung itself may be perfectly clear from the trouble. I think if anything can be done in the way of eradicating or remedying the disease, it will be simply along the line of what has already been suggested. I do not look upon the disease as hereditary, or as being

transmitted from the parent to the child. The disease in a great many cases can be prevented by proper attention to hygiene and the general surroundings.

Dr. F. W. McRae, of Atlanta: I fully agree with the excellent paper of Dr. Hopkins, and it seems to me that the subject, as Dr. Westmoreland has said, is one of so much importance that it will not do for this Association to pass it by without free discussion. Those of us who are in the cities see a great many more cases of tuberculosis, in its various forms, than the gentlemen who practice medicine in the country, because of the conditions. The larger the city, other things being equal, the more consumption we will see.

I do not think there is any question as to the pathology of the disease. It would hardly admit of discussion. Eminent men take opposite views as to the cause of the disease, but I think the pathology as given by Dr. Hopkins is correct. It is *the* pathology of tuberculosis. It does not make much difference whether we have the disease in the lung, bones, or any other part of the body, the beginning of the trouble is due to the bacillus tuberculosis. These bacilli, thousands of them, are in the atmosphere we breathe, and the reason why we do not all have consumption is, that we keep ourselves, or nature keeps us, in such a condition that our bodies are not fit soil for the development of the germ. Much can be accomplished by the proper hygienic treatment of patients who inherit a tendency to the disease. Some people acquire a tendency to the disease by not keeping their bodies in a vigorous and healthy condition.

The treatment of patients who are suffering with consumption is of the utmost importance. Proper hygienic surroundings and antiseptic treatment are necessary. Patients should not be allowed to expectorate on carpets, on floors, or on the streets, as the case may be; but they

should be taught the danger of subjecting others to the disease by so doing. They should be taught the importance of thorough hygienic surroundings and the necessity for the strictest precautions.

I have recently had a little patient who, from the very smallest development of a tubercular spot in the head of the tibia, will lose his life. The patient was not dead when I left Atlanta. The tubercular spot in the head of the tibia was not bigger than the top of my thumb. The whole knee joint became filled with pus, and all the muscles over half the thigh—the anterior and lateral aspects of the limb—had completely broken down and formed pus, so that there was a cavity which contained at least a pint of pus. I did not amputate the limb in this case as the parents were opposed to it, and I think the child would have died under the operation.

Dr. Hopkins has suggested that pus formation was simply the implantation of the micrococcus upon the tuberculous process, and that the pus formation is not due to the presence of the bacillus, but that inflammation is favored by the weakened condition of the tissues, and the implantation later of the micrococcus.

ETIOLOGY OF PUERPERAL ECLAMPSIA, ITS TREATMENT, WITH REPORT OF SOME TYPICAL CASES.

BY C. D. HURT, M. D., ATLANTA, GA.

In presenting this subject for your consideration it will be necessary for me to review briefly what has been suggested by some of the numerous writers on the same line.

This is a question of such grave import to the practitioner that any one who has had repeatedly to deal with puerperal eclampsia, has found it unsatisfactory to accept the bare statements of any author as to the pathology and treatment. The fact is that with honest efforts and opinions we are not all agreed as to cause and cure. As different remedial agents have brought about satisfactory results, so may we admit the influence of different agencies in causing eclampsia.

Dr. Hare, in his recent work on therapeutics, says, "that what is known of its etiology justifies the following statements:

First, the cell activity of mother and fœtus produces excrementitious substances which will surely prove virulently poisonous to the whole organism, unless they are voided or made harmless by the excretory organs. (Assuming that it is true that nature imposes these new duties upon the organs of the child-bearing woman, and that it is the mother and not the child that will be poisoned; that it is the mother's and not the child's excretory organs that must eliminate, he fails to tell us what particular organs must

perform this work. I can readily see that if there is an excrementitious substance, a débris, a waste product from gestation, it should be eliminated; but what reason does he assign for an imperfect removal of such deleterious waste by the excretory organs.) His second proposition is that these organs of the child-bearing woman are often inadequate to the disposal of the effete material from the maternal and fœtal bodies; consequently poisons of a nature not yet demonstrated are stored up in the maternal blood until, by cumulative force, their presence is manifested in the eclamptic seizure or other symptoms.

Third, the convulsions are probably the result of an acute anemia (cerebral) brought about by violent contractions of the arterioles; possibly direct irritation of the brain substance. Others claim that eclampsia is produced by urea retained in the system on account of a failure of the kidneys (indicated by the presence of albumin in the urine) to eliminate it. That acute Bright's disease is produced in puerperal women by the pressure of the gravid uterus upon the ureters, which obstructs the flow of urine, and that being retained in the kidneys, congestion and inflammation of these organs ensues and uremic absorption follows. I think this latter position is well founded and that a large number of the cases of eclampsia gravidarium are thus brought about. Furthermore that an excessive irritability and hypersensitiveness of some constitutions and uteri, keep up a tonic rigidity in the organs and maintain unnatural pressure upon the abdominal viscera, thereby largely increasing the tendency to such evil results. In other words, that a non-contractured condition of the uterus and abdominal muscles, leaving all the abdominal organs free to perform their functions, materially lessons the tendency to eclampsia.

I hope you will bear this last proposition in mind as I shall have occasion to refer specially to it again.

Duhrssen, in his treatise on eclampsia, says: "I regard the cause to be intoxication of the blood, occasioned by a retention of creatin and creatinin in the kidneys of the patient. That the immediate cause of an outbreak of eclampsia is irritation of the sensory nerves in the genital tract, or profound disturbance of the emotional centers." Physiologists tell us that creatin is a neutral crystallizable substance originating in the muscles and found in the muscles, blood and urine. It is soluble in water, slightly so in alcohol and not at all in ether. I fail to see how a neutral substance can so intoxicate the blood as to produce eclampsia, but I can understand how the presence of such crystals in the kidneys might irritate, congest and inflame them and interfere with their functions.

Dr. Braum says eclampsia gravidarium is accessory to Bright's disease of the kidneys, and that it is commonly produced by uremia, or the retention of excrementitious constituents of the urine.

Dr. Barnes assumes an altered condition of the blood of pregnant women and this in some degree predisposes to a morbid condition of the system; and that nature provides against a period of parturition a special supply of nerve force; that this is associated with an increased irritability of the nerve centers; that it implies a corresponding development of the spinal cord, and that this surcharged nervous system under circumstances favorable to it may be switched off and strike the signals so as to make them reflect upon the wrong track and cause convulsions.

Others maintain that an excess of blood in the system, due to the absence of catamenia and the less waste upon the mother, so distend the blood vessels as to produce an apoplectic condition of the brain.

After a careful study of various authors and summing up my observations and experience at the bedside, I feel warranted in offering the following conclusions:

1st. That eclampsia gravidarium in every case is the result of some influence which is directly or indirectly exerted upon the nervous system, causing a derangement of its functions; that such influences may be direct violence or mechanical pressure; that one or more of these influences may reach the nervous system by absorption and through the circulation; that by chemical changes wrought (under certain conditions) in the system, toxic elements may be created and prove deleterious. Again, certain elements are harmless as they exist in normal proportions in the constitution, but exert a toxic influence in abnormal quantities. Urea as a toxic element abnormally increased by retention in the system, is assigned by many as the most frequent cause. Yet there are some who do not hold to this opinion. All admit that eclampsia and uremia coexist in a very large per cent. of cases, while they disagree as to their relation of cause and effect. Furthermore, all admit that uremia cannot be found to exist in every case of eclampsia, therefore, other causes than uremia can and do produce eclampsia; that in every case irritation may and does exert an influence which materially aids in bringing on a seizure; that in many cases this irritation, intensified by protracted labor, hard pains, unyielding os and exhaustion of the nervous system develops eclampsia. That a plethoric condition of the patient, full habit, distended blood vessels increase susceptibility to an apoplectic condition and excessive irritability; that with this plethora the crowding of the blood into the lungs and upon the brain materially interferes with the functions of the nervous system; that the emotional system is not silent in some women and that it helps to precipitate a fit; that a previously abnormal or pathological condition, not dependent upon the puerperal state, may produce sufficient irritation to develop a seizure; that an anemic and impoverished condition of the system may result in it.

To illustrate: A woman may have chronic chills until her blood (from its vitiated condition), instead of being nutritious, courses through the vessels laden with malarial poison. No wonder that in this condition, when labor sets in, the nervous system should be overthrown.

I now come to speak of the treatment, and in this I will include the state of the pregnant woman from early pregnancy to recovery from parturition. When eclampsia has already seized the patient, the condition of mother and child is so imminent that we must resort to the speediest and surest method of relief. In doing this we should have in view the choice of those remedies that carry with them both immediate and permanent relief. We first seek to control the spasms and then remove the cause. Venesection, diaphoresis and catharthics are laid down by Dr. Hare in his recent therapeutics. Were we to confine our ideas of treatment to the existence in the system of some morbid material, lose sight of the intense irritation from other than toxic causes, we would but partially comprehend the great task before us. Whatever may by this toxic material be removed, when eclampsia comes on we must relieve the nervous system. Hence we have the following list of remedies from which to select: Chloroform inhalation, hydrate of chloral, wet blankets, morphine, gelsemium, veratrum viride, apomorphia and others. Morphine, chloroform and chloral are among those remedies which paralyze reflex sensibility, relax the muscular system and for the time control the spasm. These do not remove from the system any morbid matter, and in uremic cases tend rather to accumulate than eliminate the materies morbi. Venesection in all cases except those truly anemic cannot fail to accomplish good; first by lessening the blood pressure, then by removing with the blood some of the morbid matter which would be removed by diaphoresis and catharsis; again it would, if carried far enough, thoroughly relax the whole muscular

system, which others seek to do by the use of hot blankets. Blood letting also removes an apoplectic condition of the brain, restores to consciousness and saves rupture of blood vessels. If labor is well advanced and not yet complete, blood-letting relaxes the unyielding os and hastens the termination of labor. With gelsemium sempervirens I have but little experience and do not care to occupy your time. With veratrum viride I have a good large experience. In it we find a remedy applicable to all cases unless it be those truly anemic; it meets the immediate and the remote needs in the case. It immediately depresses and sedates the nervous system, without delay controls the spasms, relaxes the muscular system, allows the blood vessels, including the capillaries, to receive a full share of blood and thereby takes any undue pressure off the brain; it is a powerful and prompt diaphoretic; it is a diuretic, and besides this it eliminates promptly by emesis a large quantity of greenish material which evidently must remove some materies morbi. Veratrum viride then combines in a large degree properties that meet all the demands in puerperal eclampsia. It is prompt in all its actions, it is safe, easily administered hypodermically. The prompt relief which veratrum exercises cannot be accounted for upon any other ground than that of its primary influence upon the nervous system. Before it has time to cause elimination through any of the excretory organs it slows the heart's action, removes coma, quiets the nerves and relaxes the muscles. These effects are well accomplished in thirty minutes. Then follows the work of elimination, by diaphoresis, by emesis, by diuresis.

To secure prompt and decided relief when treating eclampsia, whether uremia is or is not present, unless the patient is very anemic and with a broken down constitution; I would, if she is of full habit, draw twelve to twenty ounces of blood, then use hypodermically ten to fifteen drops of Norwood's tincture of veratrum viride then order a quart of

warm water thrown into the rectum. If the convulsions are post partum, I would first use the veratrum and warm enema, and see that the bladder was well emptied. I have resorted to chloral and chloroform; and by no means would I ignore these. I dislike the use of morphine because of its tendency to check the secretions. Apomorphia I believe to be valuable in some cases. Have had but little experience with it.

The following cases taken from my note book serve to illustrate my treatment:

Case 1. A primipara, age twenty-two years, a tall well formed brunette had been in labor two days when I was called in consultation. Two hours before my arrival eclampsia had set in, deep coma with convulsions occurring every twenty or thirty minutes still persisted. The doctor informed me that he had taken fourteen ounces of blood from her arm and had given half a grain of morphia hypodermically. Upon a digital examination I found the os fully dilated, the occiput presenting, the brow pressing hard in the hollow of the sacrum. I introduced two fingers into the rectum, and through its anterior wall made traction upon the brow bringing the forehead well down on the perineum. The next pain attended with a convulsion delivered the head. In a short while the third stage of labor was completed. Coma with heavy stertorous breathing continued, and in about two hours after delivery she had a convulsion seemingly more violent than any previous one. I suggested to the doctor that her bladder was full enough to cause considerable irritation, and that he use the catheter, which he did, removing a quart of stale urine. No abatement of symptoms and soon the convulsion returned; when I suggested to the doctor that he use twelve drops of veratrum viride (Norwood's tincture). Thirty minutes after its introduction into the arm her pulse came from 140 down to 90. She opened her eyes for the first time and manifested intel-

ligence, vomited freely, took a drink of water and so on went into a doze. Five hours later she became quite restless with twitching of the muscles, pulse 120. We repeated six drops of veratrum by the mouth, which was repeated every four hours for the next twenty-four, during which time her bowels were opened with castor oil. From then on she became interested in her babe and made good recovery.

Case 2. A blonde multipara, age twenty-four years, general health good until she entered the ninth month of gestation, when she became anemic, with considerable swelling over the entire body. She was attended by her father, a retired intelligent practitioner, and when in labor eighteen hours, eclampsia developed. I was summoned and on entering the room I discovered her in a convulsion with opisthotonus. I extracted twenty ounces of blood and gave hypodermically twelve drops of veratrum. She soon regained consciousness and I delivered the child with forceps. She made a fair recovery without any more convulsions.

Case 3. A blonde, twenty-three years old, primipara, of full habit, highly nervous; when in labor twelve hours the os dilated to two inches, she complained of blindness and immediately had a convulsion. I had her wrapped in hot blankets, ordered a warm enema for the bowels, and gave her one-half grain morphine hypodermically. Spasms recurred every five minutes for half an hour when I gave fifteen drops of veratrum; after which she had only one spasm. I proceeded, with the assistance of a consulting physician, to deliver with instruments. A good recovery in the usual period of time.

Case 4. A multipara was in the seventh month of pregnancy, had been complaining for a week when her husband called me, stating that his wife had a spasm. I was very busy and sent my brother who had a few months before graduated, and followed him an hour and a half later

He had given her, before my arrival, twenty grains of chloral with no abatement of the coma when I arrived. We gave her fifteen drops of veratrum. Thirty minutes later she became conscious and complained of severe nausea, and vomited freely of greenish substance. After a few more labor pains she was delivered of a putrid six months' fœtus. With usual treatment she made a good recovery.

Case 5. A blonde, nineteen years old, short and compactly built, primipara; when labor had advanced for six hours, the head distending the perineum, she complained of backache and muscular twitching and at once had a convulsion. I gave her ten drops of veratrum, waited twenty minutes and delivered with forceps. She had an uninterrupted recovery.

Case 6. Multipara, well formed, was delivered of healthy twins by her physician. Two hours after delivery, in the absence of the doctor, I was summoned in time to see her in a second convulsion. I gave her fifteen drops of veratrum, emptied the bladder with a catheter and left a note for her physician telling him what I had done. I learned from him some days afterwards that she made a good recovery without any more convulsions.

Case 7. Primipara, blonde, general previous health good, except that she had been in the habit of suffering great pain at her menstrual times. At the sixth month of her pregnancy she became very nervous and had several convulsions. When I arrived she was semiconscious and complaining of uterine pains. I extracted twelve ounces of blood, and gave by the mouth ten drops of veratrum. The next day as she was still nervous and as I discovered albumin I directed her to take five drops of veratrum *ter die* until I returned. Called in two weeks and found her doing well; discontinued the medicine. One week later was summoned to find her with the jerks again, as she expressed it. She

then resumed the medicine under my direction and continued it for three weeks. Seemingly well again, I had her leave off the medicine. On my return one week later I found her trouble returning. I then directed her to continue six drops of veratrum *ter die* until the completion of gestation. I attended her in parturition, labor lasted eighteen hours. Os very unyielding. When in labor six hours she manifested great nervousness, and I gave her ten drops of veratrum, which was repeated in six hours. Labor terminated well.

One other condition I would like to mention: With some females the uterus is so sensitive and irritable that the gravid condition is tolerated under protest from that organ, and ever an anon we meet with one that, despite all our efforts to prevent, throws out its contents prematurely. Among these cases we find some that by great watchfulness we can induce to go to full term. These cases are usually attended with so much irritation as to keep up a constant contraction of all the abdominal muscles and viscera. This latter condition rendering immobile in a greater or less degree the gravid uterus, keeping it pinioned against the sacro lumbar space, compresses the ureters, congests the kidneys, causes uremic absorption, œdema and eclampsia. Case 7, in my report, furnishes an illustration.

If puerperal eclampsia is the result of some virulent poison, the excrementitious product of cell action, veratrum has the power of neutralizing or so antagonizing it as to render it harmless. If eclampsia is the result of acute cerebral anemia, brought about by violent contractions of the arterioles, veratrum has the power of relieving the circulation by directly or indirectly dilating the smaller blood vessels. If eclampsia is the result of uremic condition, veratrum has the power of arresting its poisonous action and at the same time eliminating the urea.

If acute Bright's disease results from pressure of the

gravid uterus upon the ureters, veratrum seems to relax the muscles, equalize circulation through the kidneys and relieve their congestion. Veratrum counteracts a hypersensitiveness of the nervous system, relaxes the muscular system, equalizes the circulation and in this way overcomes some cases of eclampsia. If, under the use of other remedies, it is regarded as indispensable to empty promptly the gravid uterus whether at or before full term of gestation, I believe that in many cases it is practical to relieve the eclampsia and conduct the patient safely through. If the increased sensibility is from an oversupply of nerve force, stored away for the woman in parturition, then veratrum and chloral are indicated. If plethoric condition then veratrum and venesection. If a truly anemic and impoverished condition of the blood then morphine and aromatic spirits of ammonia, with cautious use of veratrum.

Dr. Fearn in 1871 reported thirteen cases treated with veratrum in large doses with no death. Rushmore recently collected twenty-five cases with twenty deaths, 23.5 per cent. Dr. Cutter stated some years ago that in a twenty-five year work he had seen on an average eight cases annually, that he relied upon veratrum and had not lost a case. Dr. Loe reported twenty-three cases treated with veratrum and benzoic acid with no deaths. In fifty cases collected by Trimble veratrum gave the best results. Of these twenty-six were treated with veratrum and three deaths; twenty-four with other means and six deaths; 11.5 and 25 per cent.

PERSISTENT REMITTENT, OR SO-CALLED TYPHO-MALARIAL FEVER.

BY W. P. WILLIAMS, M. D., BLACKSHEAR, GA.

Before entering into the discussion of a few cases of persistent remittent fever, I wish to devote a few remarks to papers that were read and discussed before this body, and which, with mine, were printed in the proceedings of the session of 1892.

There were three papers printed in those proceedings which touched and discussed to some extent the topic in hand. One by Dr. A. C. Blain, of Macon; one by Dr. J. W. Duncan, of Atlanta; and one by myself.

First.—I wish to call your attention to the paper of Dr. A. C. Blain on remittent fever, which received some considerable attention from this body. Now, it would not be professional in me to agree with the doctor in all the details of his paper, but I most emphatically agree with him in placing malarial fever, or remittent fever, upon its own and singular base, and let all this straddling go to the winds. If we are mistaken in a diagnosis of remittent fever, it proving to be typhoid fever, or *vice versa*, let us away with evasions and deception of ourselves, and meet it as become men and physicians. There is no shame in an honest mistake made after following a close study of the case. If there were, every member of the profession, from philosopher to fool, would be covered by a mantle of disgrace. But what was the reception accorded the doctor's paper, and what lessons can be drawn from that discussion

to aid our comprehension of remittent fever, the subject in hand? I read the discussion, and it seemed to me that remittent fever sank into "innocuous desuetude." For the life of me, if Dr. Blain had written on typhoid fever pure and simple, the discussion of it could not have been more appropriate than the discussion he received for remittent fever. I wonder if our friends who have cases of remittent fever, with hemorrhage from the bowels, etc., ever have such a thing as typhoid fever in their practice, and if so, under what horrible phases of character does the monster stalk? Dr. Blain asked the discussion of remittent fever, and received a discussion of typhoid fever. He asked for bread and got a stone; for a fish, and they gave him a serpent. If we should haply receive at the hands of a member a treatise on measles, I most humbly protest against discussing smallpox. I have no doubt that many of the first diagnosticians made grievous mistakes in diagnosis; but when a case of remittent fever has tympanites and hemorrhage from the bowels, I think it is time to change the diagnosis. Further, if a patient should die of remittent fever, and a *post-mortem* examination should reveal typical lesion of typhoid fever, I should think there might possibly be some little amount of room for a small quantity of reason to believe that peradventure it might have been typhoid fever.

The other paper of interest was that by Dr. J. W. Duncan, of Atlanta. The doctor draws the line plainly and distinctly. There is no mistaking, to say the least, where he stands in this matter. He stands with both feet on typho-malarial fever, or rather he stands with one foot on malaria and the other foot on typhoid. I have nothing to say on this except what I have said in my papers. I believe the doctor is wrong. His premises are wrong; therefore his conclusions are wrong, and when one is so much in error they are liable to wander off into abstract specula-

tion, as the doctor did when he gave us an extract from Dr. C. Coleman Benson, of Baltimore, Md.

As a supplement to my paper before the Association at its last meeting, I propose to give an analysis of a few cases of persistent remittent fever, touching its diagnosis and differential diagnosis from typhoid fever, especially the value of such a diagnosis in prognosis treatment and results. In the treatise I shall not spare myself from the errors which I was culpable of, but from those errors draw some particles of truth which may prove beneficial and go towards giving a more comprehensive knowledge of the character of this malady. I only present the clinical side of this matter; my investigations extend no further.

There are three forms that I wish to present for your consideration:

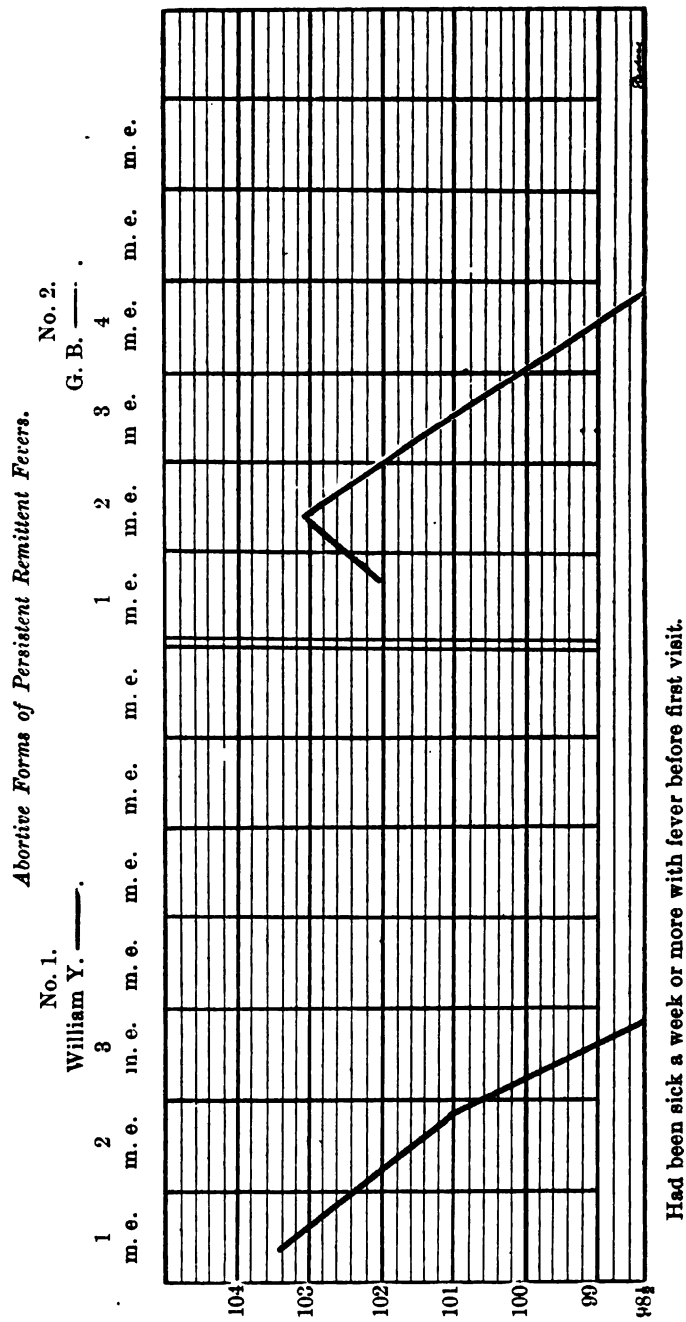
1. the abortive form, or such as are immediately amenable to treatment.
2. The continued form with low temperature.
3. The continued form with high temperature.

Under the first form I was called to see a case of a negro that had been sick about a day. I found a temperature of 106°; no other striking symptom. I gave him fifteen grains of quinine, and left two other doses to be repeated at six-hour intervals. My diagnosis and prognosis was persistent remittent fever, with the prospect of a long siege. I returned next morning; my patient was up and gone.

(b) G. B., female, twenty years old, complains of severe pain over sternum. Temperature 101°; pulse relatively normal; tongue moist and indented—not furred, but white coat. Has had fever two weeks. Diagnosis, persistent remittent fever. Prognosis, a long siege. Prescribed ten grains of calomel; gave quinine three times a day in ten grain doses. September 6th, temperature 102°; appears better; is rid of pain. September 8th, called to see patient; up and gone visiting; dismissed case.

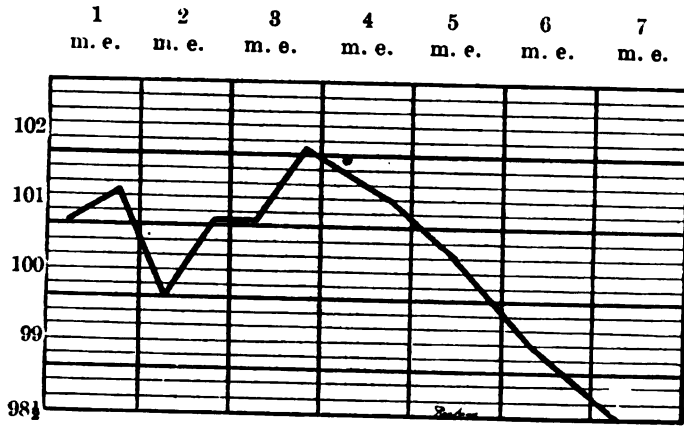
Second.—Continued form with low temperature, a form that is very often assumed even when the malady has had a high temperature. A large per cent. assume this form. A case may occur with a temperature of 103° to 105°, and either of itself or by medication drop to 100°, and continue at that height for weeks. For example (see chart No. 3), B. D. B., male, age twenty-eight, August 5th, evening temperature 102°. It continued to fluctuate between 100° and 102° until August 8th, and after having taken ten doses of one-tenth of a grain calomel triturates, fever rose to 103° on evening of August 8th. I staid with the patient during the night, taking his temperature every two hours, and found that it rose and fell from 102° to 101° three times. On morning of August 9th I left him with temperature of 101°. Whether it was the secondary effects of the cholagogue that caused the reduction I don't know, but there was no febrifuge given, nor any other medicine. From the evening of August 9th, at which time his temperature reached 102°, until August 29th, at which time I dismissed the case, the evening exacerbations did not reach over 100$\frac{1}{5}$°, and the morning temperature was often within one-fifth of a degree of normal. During his course of illness I gave him quinine and Fowler's solution, and on August 7th a course of calomel triturates, which acted freely. On August 9th I gave four grains of calomel in broken doses; it not acting, gave eight grains of calomel with ten of rhubarb. On the 16th gave ten one-tenth of a grain of calomel triturates. On the 18th ten grains of calomel with fifteen grains of rhubarb. Now, as I said, this case is typical of very many of these cases, and so far as a typhoid fever factor entering into it, I call your attention:

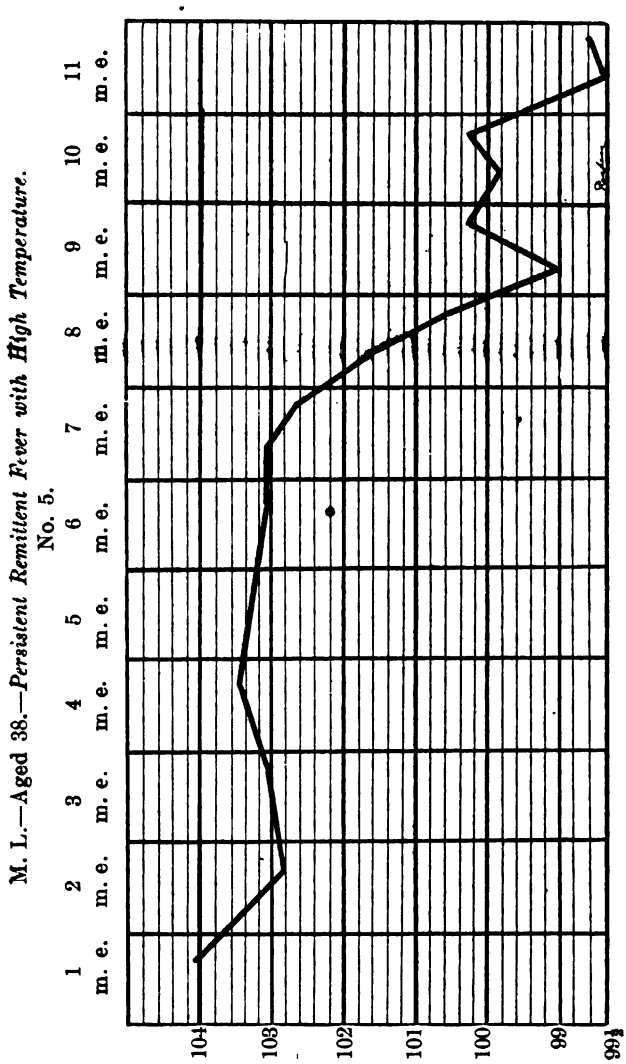
1. That when first stricken, the temperature was 102°; that after that, in two days it fluctuated from 100° to 102°. Having given one grain of calomel in one-tenth grain doses every hour during the third day, the fever rose to 103° in


Abortive Forms of Persistent Remittent Fevers.
No. 1.
William Y. ——.
No. 2.
G. B. ——.
1 m. e.
2 m. e.
3 m. e.
m. e.
m. e.
m. e.
1 m. e.
2 m. e.
3 m. e.
4 m. e.
m. e.
m. e.
104
103
102
101
100
99
98½
Had been sick a week or more with fever before first visit.

C. C. J.—*Case No. 3.—Persistent Remittent Fever with Low Temp.*

No. 4.





M. L.—Aged 38.—*Persistent Remittent Fever with High Temperature.*
No. 5.

the evening; without the aid of any antipyretic it fell to 101° next morning. Now, either it would have acted this way of itself, or else the cholagogue was a factor in the case. The fact is, that although the fever lasted for twenty days longer, it never regained its high temperature. Here was an absolute decline of two degrees in ten hours without a febrifuge. Barring a case of hemorrhage from the bowels, and the bare possibility of typhoid fever ending in crisis, I do believe that there never occurs such a remission in it.

2. I remarked in this case that the ratio of pulse beat to rise of temperature was not maintained; that is, that the pulse beat in the evening exacerbation was less rapid than in the morning remission. Constipation, as in most all of these cases, was marked. Another thing was the many fluctuations in the wave of temperature during the day.

Third.—Continued form with high temperature. And I will say here, that this form has proved to be apparently more amenable to treatment than the other. For example (see chart No. 5), on December 8th I saw Mrs. L., white, age thirty-five, been feeling ill for a few days, tongue not much coated, bowels constipated, had to use cathartics to open them. Evening temperature 104°, diagnosis persistent remittent fever. Gave calomel ten grains, quinine nine grains, three times a day. December 29th, temperature $102\frac{4}{5}$°, pulse 106, complains of pain in breast and limbs. December 30th, temperature 103°, pulse 106. Now watch variations from ratio of pulse beat to rise of temperature: January 1st, temperature $103\frac{3}{5}$°, pulse 98; January 2d, evening temperature $103\frac{2}{5}$°, pulse 98; January 5th, morning pulse 100, temperature $101\frac{4}{5}$°; January 6th, morning pulse 113, temperature 99°; January 7th, evening temperature $100\frac{1}{5}$°, pulse 113; January 8th, dismissed patient with normal temperature.

Now, this is a typical history of very many of these cases of fever, and I should like to ask my worthy opponents

how much typhoid fever was mixed up in this case with a temperature of 104° and ending in convalescence, under treatment, in ten days. And if you notice, there was an appreciable improvement almost from the start. As far as the medicines used in these cases are concerned, I feel satisfied that they were factors in the abridgment of and cutting short the disease. But I would not forget a possibility that some of these cases might have run their course as favorably without a dose of medicine.

These three cases are typical, all others merging into some of them. That the diagnosis could have been made, and was correctly made, is quite evident from their history and termination. But that there is a point at which this malady closely similates typhoid fever, or, more correctly, typhoid fever closely similates malaria, I will admit, but these cases are few in comparison with the number in the other classes.

The hardest diagnosis to make, and the one upon which I have erred mostly, is that where typhoid fever similates persistent remittent fever in the beginning, and without developing any of the typical symptoms of typhoid, bides its time until the fever has run the second or even third week, and then appearing in one or more of its typical phases. Example: H. H., three weeks ago was taken with chills and fever, took quinine with relief. Three days ago, on exposure, had chill; has had more or less fever ever since. He gives a temperature of 101°. From history, I supposed it to be simply intermittent fever, and prescribed a cathartic with quinine in ten grain doses, and Fowler's solution. Three days later, on finding temperature of 101¾°, concluded it had assumed the persistent form of remittent fever, and continued treatment by quinine. From May 23d to 26th, using a little antifebrin, temperature vacillated about 102°. Stopped that drug, and on evening of 27th temperature reached 104°, with tympanites. Consti-

pation had been the rule so far. On 29th tympanites and subsultus were developed. This held constant until May 31st, prescribed turpentine stupes. On June 1st temperature reached normal, and I thought I was over with it, but temperature again rose, and vacillated between 100$\frac{3}{5}$°, and 101$\frac{3}{5}$°. On June 6th typical pea-soup stools appeared. From then until June 25th, at which time death occurred, diarrhœa complicated the case. This case was undoubtedly typhoid fever, pure and simple, and I was purely and simply mistaken in my diagnosis. I might have mollified my vanity considerably if I had straddled the whole thing by calling it typho-malarial fever. I mistook another case which developed these symptoms, which happily ended in recovery.

Now then to the causes that led to these errors:

1. My most emphatic opinion of non-complication of malaria and typhoid fever caused me not to be as observant for typhoid fever.

2. The more prevalence of persistent remittent fever in my locality.

3. In one of the cases an actual history of chills and fever prior to the invasion of typhoid fever.

4. No rose-colored rash, or any well defined symptom of typhoid fever in the first stage of the disease.

What can we use in a differential diagnosis of persistent remittent fever and typhoid fever? At the outset, in an attack, I must acknowledge it to be a hard problem to solve, especially in isolated cases, but where one or the other is prevalent, we can go upon the probability that it is of the class prevalent.

Another differential diagnostic point which I consider of the highest importance is the scale of temperature. As a rule, typhoid fever has a graded ascent in its temperature the first week, then holds this maximum temperature, with slight morning remissions, for another week, and then a

gradual decline, if it ends in convalescence. This fever often reaches its maximum the first or second day, and is more liable to fall in temperature than otherwise. For this reason, I think it better to forego antipyretics like the coal-tar derivatives, etc., for the first few days. Besides this, there are those symptoms of typhoid fever as epistaxis, rose-colored spots, gurgling in right iliac and tympanites, that may aid in deciding or excluding typhoid by their presence or absence. But as I said, these cases where you have to split hairs in forming diagnosis are happily infrequent, as compared with the large number that should readily be diagnosed. For general differences, see my first paper (Transactions Medical Association of Georgia, 1892).

The value of a diagnosis between these maladies is apparent when we come to the subject of treatment. The treatment which I follow, which has proved reasonably successful in persistent remittent fever, is the anti-malarial preparation, principally cinchona and its derivatives, and arsenic, with cholagogue cathartics (most frequently calomel) at stated intervals, applying other medicines as they are indicated. This treatment, while very beneficial in a large number of malarial patients, I would consider utterly useless and even dangerous in applying to typhoid fever cases.

Before concluding this paper, I wish to call the attention of this body to a phenomenon, which I suggested in the report of several of my cases, and whether, under scrutiny, it will amount to anything, I shall leave for you to determine. If it is coincidental, it is a coincident that has occurred quite frequently to me. We are all acquainted with the fact that, as a general rule in fevers, for every degree in rise of temperature there is a corresponding increase of heart action from eight to ten beats. In several of my cases of this fever this ratio was completely destroyed, and in some the reverse took place.

DISCUSSION ON DR. WILLIAMS' PAPER.

Dr. J. G. Hopkins, of Thomasville: Unfortunately I did not hear all of the valuable paper of Dr. Williams. He mentions towards the close that we ought always to avoid the use of the coal-tar derivatives at the start because of their depressive effect. These cases are all of an asthenic type, and if we are going to use the coal-tar derivatives at all, I would do it at the start. Within the first day or two we have the highest temperature as a rule, and no man living can tell just what is going to be the course of the fever at the beginning. Frequently a dose or two of some of the coal-tar derivatives, such as antipyrin or antifebrin, will reduce the temperature and the fever ends. Should the disease be of malarial origin quinine would settle the question. I should not give any of the coal-tar derivatives if the case had advanced any time. I have made tests with these cases, using no medicine at all. I have tried it repeatedly and found in those cases in which I did not use anything but milk punch and nourishment all the way through, without giving either quinine or any of the coal-tar derivatives, they have gone along and run their course of a week, or two or three weeks, and completely recovered just as though medicines had been given.

Dr. Williams: Dr. Hopkins has said that he would use the coal-tar derivatives at the outset of the disease. I think the differential diagnosis of this disease from typhoid fever is valuable enough to forego the use of antipyretics for the first few days to catch the run of temperature as a diagnostic point to determine what the malady is. That is my suggestion in regard to the use of the coal-tar derivatives.

SOME REMARKS ON ASEPTIC SURGERY, WITH DEMONSTRATIONS OF STERILIZING METHODS.

BY T. M. M'INTOSH, M. D., THOMASVILLE, GA.

When John Hunter, more than a century ago, noticed that subcutaneous wounds healed without suppuration, the first principle of aseptic surgery was announced.

Wounds, therefore, were closed firmly to exclude air, the oxygen of which being thought the cause of suppuration, and in fact of all fermentative processes. The bad results from this led to the open methods of treatment, which prevailed more or less modified in principle until Sir Joseph Lister introduced the spray and elaborate dressing. This was suggested by the observations of Prof. Tyndall, that the air was filled with myriads of germs, which collected, and, in proper media, would reproduce themselves and changes in containing media.

These, Lister argued, were the causes of suppuration, and logically excluded them from the field of surgical operation and by his antiseptic spray.

Practical application soon demonstrated that the spray was a superfluity, and the author of it himself abandoned it. Then there must be some other source of wound infection than the atmosphere, and it must have been merely the cleanliness which gave to Lister's method its wonderful results and modern surgery its means of rapid progress and crowning triumph.

The accumulated experience of practical surgeons has

led to the idea that it is grosser causes of uncleanliness that infects wounds; and this with the discovery by the microscope of the micrococcus pyogeneus, have greatly simplified practical surgery, and given a clearer conception of the sources of wound infection, and clearer indications as to how to avoid them; and we endeavor more and more to do "aseptic" and not "antiseptic" surgery—to prevent infection, not to neutralize it. It may be that the distinction is one of "splitting hairs," but it might be that by the lavish use of the vaunted bichloride solution, it would give a deceptive sense of security and a delusive surety of neutralizing, when the end desired can only be accomplished by greater care and time in preventing entrance of infective causes.

While these advances have greatly simplified surgical technique and placed it within the power of any one to apply, it has made clearer to the operator the greater responsibility which rest upon him, in the greater care and time which must be directed to preventive detail: "Asepticism," than to the effort of destruction of germs by chemical solution, "antisepticism."

The aim is in making a wound that is as nearly as possible in that condition which obtains in a subcutaneous one, and which is done by thorough asepsis, and the least possible insult to the wound surfaces by contact with any extraneous substances, even though they be sterilized.

The trend of surgical work at present is that we must look more to the grosser causes of wound infection and not the atmosphere; that an unclean person of the subject and the field of operation, the hands and clothes of surgeons and assistants, sponges, sutures and gauze, rust, dirt and blood on instruments, are the sources of infection; and when a wound is made with these causes eliminated, properly dressed and immobilized, that condition is obtained which is as near as possible to the subcutaneous wound,

and in such wounds (aseptic) it is unnecessary, and may be harmful, that an antiseptic solution should come in contact with it, because such substances cause departures, more or less, from the conditions of subcutaneous wounds, and by their very nature may produce more or less irritation, certainly more than simple sterilized water.

The difficulty of always making a thoroughly aseptic wound is evident, and even the biologist and bacteriologist cannot always obtain pure cultures; but to obtain purity of culture media they do not use chemical germ destroyers, for this spoils both the culture media and the germ desired to be cultivated. So in a wound, the solution strong enough to destroy the micrococcus pyogeneus, or other sources of infection, would injure the natural healing condition and the inherent power to resist and destroy infections present.

The bacillus of anthrax being the most retentive of life, it is the standard of experiment. A 5 per cent. solution carbolic acid at ordinary temperature requires thirty-six days to kill; at 75 C., fifteen minutes; one and four-tenths solution carbonate soda thirty to sixty minutes at temperature 75 C; boiling water, 100 C., in two minutes.

As bearing also upon the use of antiseptic solutions it is interesting to mention the experiments and investigations of Metchsnikoff and others upon the behavior of the wandering cell. This cell he regards as that which resists the attack of the micrococcus of diseases by "eating" it, as it were, for its own growth. These phagocytes, as he calls them, exist normally in the healthy body. When the micro-organism of disease is introduced there is an irritation, and the phagocytes collect at this point in great numbers and destroy the disease germ, and aid in the formation of a limiting membrane of plastic lymph. In this battle, if the invading germ is not in too great numbers, the phagocyte will triumph and a healthy condition is

maintained or re-established. In noting this process under the microscope, and testing the influence of various chemical solutions upon it, it was observed to check it, the phagocyte being seen to disgorge an invading cell which it had partially "eaten." Sterilized water and very weak alkaline solutions had little or no effect. Again, it is well known that the admixture of any chemical solution with the blood prevents the rapid and firm clot formation, and that a four per cent. sodium chloride solution will maintain the fibrin in solution in the blood plasma.

In view of these experiments and observations it might be that we do injury by the introduction into fresh wounds of antiseptic solutions, by impairing the resistive power of the tissues or the phagocyte, and lessening the firmness of the blood clot, the natural and best hæmostatic. So it would seem that only on towels, sheets, hands and the unbroken skin do we find a place for the sterilizing effects of chemical solutions, where they can be used without harming the tissues, sufficiently strong to kill the germs.

These remarks must not be construed as an attack upon or as undervaluing the results of antiseptics in surgery, but merely to direct attention to and thought upon the real causes that have led to such brilliant surgical achievements, and that we have, perhaps, not had the true conception of wound treatment in the use of "antiseptics" which may have been of harm by injury to tissue, and creating a feeling of false security when we have used them.

The aim is, therefore, prevention. "Asepsis"—not destruction—"Antisepsis."

When we were boys and swam for hours in ponds and streams we noticed the good effect upon our traumatic shins and great toes. The sores of Lazarus were licked by dogs and were "cured." It was cleanliness.

Now, as to how to carry out all these principles and details in practice: First, recall that from dampened sur-

faces arise no dust or impurities, and this applies to the wetted walls and floors of the operating rooms.

Preparation of subject: Take a case of accident, and not case in operating room: First. Wash the part to be operated on by thorough scrubbing with soap, warm water and brush for five or ten minutes, then wash with 1 to 1–2000 bichloride solution; and, to more thoroughly remove dead epidermis, the writer washes the parts with ten per cent. carbonate soda solution; also, the entire body is then enveloped in sheets wet with bichloride 1–2000, and the wound irrigated from ten to fifteen minutes with sterilized water. In case not of accident, the entire body is bathed, clean clothes put on, and the operating room wetted, and no fluid whatever is put in the wound unless for special reasons to wash pus or blood from the cavities. If a laparotomy is to be done, the abdomen is washed with ether to more thoroughly remove the oils of the skin.

The hands of the operator and assistants are scrubbed in the same manner, especial care being devoted to the finger nails. The instruments, etc., to be used, are placed conveniently near on wet sheets. If in operating room, sterilized aprons should be put on by operator and assistants.

It was the writer's good fortune to remain the greater part of 1891 in Europe, chiefly in Berlin and Vienna, and the methods here described will be those, more or less modified in detail, carried out in the clinics of Von Bergman, Schweigger, Hirschberg, Martin, Olshausen, Billroth, Leopold of Dresden.

The brushes are kept, when not in use, in 1-2000 bichloride solution and boiled before use. I prefer to clean them in strong soda solution, and put in sunshine wrapped in towels, and boiling before use. Instruments are first thoroughly brushed with soap and warm water, boiled for five minutes in one per cent. soda solution. Sponges are soaked

for seven days in twenty-five per cent. solution carbolic acid, changed each day, and washed with soap and water, and the seventh day so treated sponges are ready for use. These I prefer to cleanse with strong alkaline solution, and if they are new, first dissolving the particles of lime in them with a weak solution of sulphuric acid. Few surgeons, however, use sponges, but sterilized gauze instead. The methods of sterilizing and preserving ready for use, the gauze, catgut and silk is strictly that of Von Bergman in Berlin. The catgut is soaked for twenty-four hours in sulphuric ether to dissolve all fats, and kept in ninety-five per cent. alcohol in which is dissolved one per cent. of bichloride mercury. This solution is changed each day until there is no cloud or sediment. Silk is boiled and kept in same solution. Gauze for sponges, towels and aprons are sterilized for an hour by steam in a specially constructed sterilizer.

While being fortunate enough to have an operating room (with a few beds in adjoining rooms for keeping patients after operations), so constructed that every part of it can be thoroughly wet, in which there is all the necessary sterilizing apparatus for gauze and instruments, some of which I show you here, it is found convenient to have this metal, partitioned, case for transportation in which there is silk and catgut on spools in little glass jars filled with Bergman's solution, and so made that I draw ligatures and sutures out as needed for use with no danger of infection; a jar for drainage tubes, and dry iodoform, in which I rub my gauze, as needed for use, with my hæmostatic forceps; a measure glass for a bichloride solution, in a small bottle, of such strength that one drachm makes one pint of 1–2000 solution. Another zinc vessel also, with holes in the sides near the top and bottom, which can be opened when contents are being sterilized, and closed when it is done, in which is placed the gauze used for sponges. This

vessel with contents is placed in the steam sterilizer for one hour, taken out, door closed, placed in a clean pillow-case and is ready for transportation, and can so be kept.

This vessel for gauze is in use in Bergman's clinic. The steam sterilizer, which was made by Reynder's sons from models brought home with me, consists of three cylindrical vessels; the internal one of zinc, in which is placed the above described vessel full of gauze, aprons, etc.; the next one of copper, which is full of water, in which the central one sets; the outer one is the heat chamber, in which both the other two set, as it were. The heat applied to the bottom of the middle vessel passes up and out at the open top of the outer one, the steam passes from the middle vessel up and down into the internal one (these both being closed at the top) through it, penetrating the gauze, to the bottom, where there is an escape. Here I show you baskets of non-oxidizable metal in which are placed instruments for boiling, which can be set in any suitable boiling vessel, and taken out almost dry; or the instruments can be wrapped in a towel and dropped into the boiling water and withdrawn by a string previously tied around them. Boiling pots are at hand anywhere.

The method for making gauze and absorbent cotton ready for sterilization is, so far as I know, my own. The cheese cloth of the stores and the cotton of the markets is soaked for one week in ten per cent. caustic soda solution to dissolve the oil of the raw material, removed and boiled for one hour, washed in water, boiled again, washed, dried and sterilized.

If for use in packing open wounds or unclean cavities, it is desired to increase the rapidity of its capillary absorption, wetting it in one part glycerine and three parts water and drying will accomplish it. Billroth, who does not use iodoform gauze ready prepared, does so in this manner: Iodoform 250 gr., glycerine 1000 gr., mix and add alco-

hol 4000 gr. This makes a solution of the iodoform, in which the gauze is soaked, removed and dried and is ready for use.

The specimens of gauze—simple glycerine and iodoform—here shown are made by myself, and at from one-fourth to one-third the cost of the ready-made, and one is sure of what is used.

The thoughts in this paper and the preparation of these means for my personal use for making clean wounds have been of much interest to me. I trust some little also it may be to others.

The remarks on aseptic surgery are expressions of the increments of thought which I have had for a long time, and ten years ago, in a paper before this body, it was ventured to say that in "boiling water" we had the sterilizing means in surgery; and as but few surgeons now use chemical solutions in wounds, sterilization by steam and boiling water will be, it seems, the shibboleth of future surgery.

PERIPROCTITIS, WITH AN ABSCESS AND REPORT OF A CASE.

BY M. L. CURRIE, M. D., MT. VERNON, GA.

Periproctitis is one of those infrequent inflammatory diseases which the general practitioner may at any time be called to treat, and which he may fail to recognize until much damage to the patient ensues. If properly diagnosed, it may then be improperly treated, owing to the fact that he can not always find such a precedent as he needs.

It is usually suppurative in character, but a cure may be effected by absorption, even after a distinct tumor is formed. Of the cause of this disease but little can be said. It may result from traumatism, foreign bodies, extension of adjacent inflammatory processes, or any structural disease involving the mucous membrane of the rectum. The manner of its extension and the cause of the morbid processes excited are identical with those seen in perityphlitis following typhlitis.

The prognosis depends much upon the time when diagnosed, the treatment of both the inflammation and the abscess, as well as the physical condition of the patient. When the vitality is low and the abscess high up in the pelvic cavity, or when the patient is tuberculous, it is unfavorable; when otherwise we may hope for recovery. The diagnostic symptoms and the treatment I will give in connection with the following case.

Mr. G. B. A., age thirty-seven, weight two hundred, very muscular and stout, on the 26th day of January last applied to me for treatment, stating that he had *piles*, that

he was going to visit a sick relative in North Georgia and would be gone two weeks. Presuming that he knew his trouble, and without any examination, I gave him the usual prescription to regulate bowels and an ointment for the hemorrhoids.

On the 18th day of February, I was called and found my patient in bed with a temperature of 102°, suffering with intense pain in and around the rectum, with tenderness of the whole pelvic region. On inquiry he gave me the following history.

On the 6th day of January last, while in the act of defecating, a severe pain was felt low down in pelvic cavity on left side, which continued daily, and which was always worse when bowels moved or during exercise. During his entire visit the pain was incessant. The medicine prescribed by me failed to relieve him, and while riding on the cars, he was unable to sit erect, owing to the pain it caused him.

Having carefully examined him, I found some induration of tissue and slight swelling with heat and much tenderness below Poupart's ligament on left side. The sphincter muscles appeared to be spasmodically contracted, and the tenderness around the anus was so great that I could not by the use of a 4 per cent. solution of cocaine introduce my finger into the rectum.

For this condition I advised rest in bed, and gave for the pain morphine and atropia hypodermically; for the fever, phenacetine and quinine; for the bowels sol. sulphat. magnesia with aromatic syrup of rhubarb and enemata of warm water; for the tumor I applied warm fomentations.

February 19th and 20th the swelling in left side gradually increased until a tumor as large as a walnut could be distinctly outlined, for which I applied warm starch poultices every two hours. On the morning of February 21st I discovered that the tumor had greatly diminished. In

the evening, with the assistance of Drs. McCrimmon and Summerlin, I made a careful examination under an anæsthetic, both digitally and through a rectal speculum, and could discover no signs of a tumor or abscess except the inflammation. During the next three days the inflammation increased, the pain became more severe, attended with constitutional depression and inability to urinate.

February 25th, assisted by Drs. Rogers and Summerlin, I again anæsthetized the patient, and with difficulty I felt the lower edge of a fluctuating tumor protruding into the bowel at the apex of the ischio-rectal fossa, which probably pressed upon the urethra and rendered it necessary for me to use the catheter to empty the bladder.

With the index finger of my left hand resting against the edge of the tumor through the rectum, I passed a medium sized trocar parallel with the bowel straight up for four inches. The opening was then enlarged with a long bistoury and a pair of dressing forceps. Almost a half pint of foul looking pus escaped, having the odor of fecal matter. The abscess cavity was then cleaned out, and iodoform gauze introduced and the part dressed with absorbent cotton. From the time the operation was performed the abscess discharged freely until the 28th, at which time the gauze came out and with difficulty more was introduced, owing to resistance on the part of the patient. During this time the patient was restricted to fluid diet and a tonic of iron and arsenic with quinine administered. On March the 4th, I introduced a small rubber tube in place of the gauze, which change was necessitated by the healing of the wound.

On March the 8th, the discharge had about ceased and the opening to the abscess closed. The patient was suffering with pain, attended with fever and the presence of former symptoms, which increased until the 10th. At this

time, assisted by Drs. Rogers and McLeod, I reopened the abscess with my finger, removed all septa of broken down tissue and washed out the entire abscess cavity with an antiseptic solution of carbolic acid. A soft rubber drainage tube was introduced and the parts dressed as before.

The abscess discharged freely and patient was slowly convalescing, but on March 14th it was discovered that the water injected into the rectum partly passed out at the tube through the abscess.

At this stage of the case my judgment was severely tried to decide whether to subject my patient, who was at this time very weak, the fourth time to the depressing effects of an anæsthetic and sever such important structures as existed between the two openings, or wait for the abscess to heal and then operate for the fistula.

At the suggestion of an experienced surgeon I waited, and to my pleasant surprise my patient is now able to be with me in this city, and is well of both abscess and fistula without an operation.

I report this case hoping that by so doing I may be the means of relieving suffering humanity in similar cases through the agency of some one or more of my professional brethren. I believe it would have been better surgery for me to have opened the abscess through the rectum, and I know it would have been better when I first opened the abscess to have made the incision larger and removed all septa of broken down tissue.

DISCUSSION ON DR. CURRIE'S PAPER.

Dr. F. W. McRae, of Atlanta, opening the discussion: Mr. President, I would like to ask Dr. Currie whether he opened the abscess externally or through the bowel? Did you make your incision, Dr. Currie, through the skin or through the rectum?

Dr. Currie: I made the incision through the skin parallel with the bowel on the left side until I reached the abscess above it.

Dr. McRae, resuming: It seems to me the doctor has effectually guarded against any criticism of his treatment by his last statement. If he had pursued the course which his judgment now dictates, he would not have had the long-continued trouble which his patient experienced. In the treatment of these cases of rectal or ischio-rectal abscesses the thing of paramount importance is an early operation. When the symptoms so characteristic, and which have been described by Dr. Currie, have made their appearance, then the appropriate treatment, as recognized by all of the authorities, is to anæsthetize the patient, make the incision carefully, even though the pus be found deeply situated, until the pus cavity is reached, or the tumor, as the case may be. Frequently if an operation is done early, only a small quantity of pus will be found. Make a large cone-shaped incision, larger from below and smaller at the point of the abscess or apex of the incision, then with the finger break down all the trabeculæ of tissue, wash out the cavity thoroughly with an antiseptic solution, pack it from the bottom lightly with iodoform or other antiseptic gauze, and then apply an antiseptic pad with a T-bandage to hold it in position, removing it for the first few days daily. The abscess cavity will close up in the majority of cases where it is not due in the beginning to an opening into the rectum without the formation of fistula. Almost all the cases, if allowed to go without prompt treatment in the beginning, will result in a fistula and require a subsequent operation. It is unusual, where a case has pursued the course which Dr. Currie's did, for the fistula to close without an operation eventually. If it were my case I would be suspicious of blind internal fistula. I have seen several cases where blind internal fistulæ, giving no symptoms, would fill up

and subsequently give the symptoms, such as he described, of rectal abscess, from occlusion of the opening into the bowel. I recently operated on a patient with such a history.

Dr. Currie, closing the discussion: I feel some doubt in my mind yet with regard to the case I have reported. I have closely watched my patient; I have interrogated him a number of times as to how he felt. He is a man of very active life, and he says he feels all right. I examined the external opening carefully about three days ago, and there was no sign of fistula. The opening seems to have healed up nicely. We are taught to make a free opening and to do it as soon as possible after the trouble can be diagnosticated, and I am aware of that fact. All the literature I have seen and all the authors I have consulted and read teach that an opening should be made at once and the accumulating pus let out, and I made an opening as I thought large enough in the beginning. When I first made it, it was three-quarters of an inch. I filled it with gauze after having opened it with a bistoury, and enlarged it with a pair of dressing forceps, thinking it would be sufficient. If I have another such case I will open it through the rectum first, and if I fail to give relief, then I will make a free incision to the abscess from the outside.

MECHANICAL TREATMENT OF SOME SKIN ANOMALIES.

BY M. B. HUTCHINS, M. D., ATLANTA, GA.

This paper will treat of some of the various mechanical means of removing anomalies of the skin. As the text-books go generally into the subject, I shall, for the most part, limit my remarks to my own practical experience.

The destruction of superfluous hairs, of moles, birth marks, and the various simple growths of the skin will be described. Malignant diseases and tumors do not properly come within the scope of this paper.

About the year 1879, Dr. Michel, of St. Louis, successfully employed electrolysis for the destruction of the hairs in trichiasis. Dr. Hardaway, a dermatologist of the same city, followed the idea in the treatment of hypertrichosis. Various dermatologists have since reported upon its successful use. Hair upon the lip and face of women affords the usual field of operation. Three to eight cells of a galvanic battery are used. For the past two years I have used some "Law" cells put together by myself, containing as the fluid an aqueous solution of sal ammoniac. For the destruction of hairs, five of these are sufficient, though they have not been filled in two years. Seven of these cells suffice for ordinary moles. To the negative pole a pencil-shaped needle-holder containing a number 8 or 12 ordinary sewing needle is attached, while the positive pole is provided with the usual sponge electrode. Expensive needles, etc., can be dispensed with. The needle is attached

to the negative pole for the reason that electrolysis through the positive will leave a black dot at the point of insertion of the needle.

I prefer the needle-holder having a spring for opening or closing the circuit, as this leaves the entire control of the current to me, the patient steadily holding the well-wetted sponge electrode in one hand instead of having to open and close the circuit by letting go or catching hold of the sponge.

The needle is carefully inserted into the hair follicle parallel to the root, until slight resistance, the bottom of the follicle and the seat of the hair papilla is felt. The circuit is then closed and the current allowed to pass until a frothy substance the size of a small pin head fills the follicle and a small area of blanching appears around the needle. If the needle has followed the course of the hair root and remained in the follicle, the pain is less than when the root sheaths are pierced and the frothy substance is more abundant. These are practical points worth remembering. Now, if the hair is easily pulled out, you may be quite sure there will be no regrowth; but if it pulls out with difficulty, or breaks off, the current must be immediately reapplied. A pair of tweezers, but preferably a pair of forceps made for the purpose, are used to extract the hairs.

The pain is very like a bee sting after the circuit is completed, but patients not only get used to it, and a kind of local anæsthesia soon occurs. The mere insertion of the needle in any of these operations seems to give no pain. I have frequently found that patients who were unable or unwilling to stand the removal of more than ten or fifteen hairs at the first sitting, would soon endure the removal of as many as seventy-five in an hour. Frequent wetting of the operated surface with ether cools the burning sensation which often occurs, or a lotion of alcohol, water and oxide of zinc answers. The heat and redness do not last

long anyway. There is slight danger of producing enough destructive action and inflammation to leave a little scarring if the hairs are removed side by side and in numbers at a sitting, but I have frequently disregarded this in the case of patients from a distance who had but little time for the work, and with no bad results. Unnecessary strength of the current is likely to have too much of a solvent action and leave marks. Of course those hairs only can be satisfactorily treated whose follicles can be seen—a lucky circumstance for the physician, as otherwise his time and patience would be exhausted with lanugo hairs, to say nothing of his eyesight.

It is possible that the estimate of ten to twenty-five per cent. of regrowths is too high, and there should be no per cent. if the operator is sure to destroy the hair papilla and if the hair comes out with no resistance. The natural growth of the fine lanugo hairs as time passes, and the possible stimulation by the current acting in their vicinity, are to be allowed for. Moles in which the treated hairs grow tend to decrease under the current, and hairs in moles treated directly soon become dead looking and cease to grow, but the best results are obtained from treating each directly.

Illustrating the treatment of hypertrichosis, I may mention the case of a lady of forty-three, from whose chin and face I removed about three hundred hairs in a period of two and a half years, and about the same number from the upper lip. One begins on these cases with a very limited idea of the number of hairs to be removed, and you may expect your estimate to be about seventy-five per cent. too low, and in a patient of this age you may expect to find the lanugo hairs becoming full grown in the intervals between treatments. This patient had a tendency to keloid, and there was the danger that any little scar produced might take on this condition. Nothing like a scar was noticed

until towards the last, when a few minute whitish points were seen to mark the places at which some of the hairs had been removed from the chin, where the current had perhaps been a little too strong. The moles treated directly had either become almost invisible or had disappeared entirely, while those which had received the current only as needed to remove the hairs had much decreased in size. The growth of hair is often made more vigorous by the pulling out or cutting off which their owners subject them to.

From the chin and face of a lady of twenty-two I removed sixty-three, and from the upper lip three hundred and five in one week. There remained a fine downy growth upon each cheek, which may give trouble in the future. No bad effect followed the energetic treatment in this case. I may mention in passing, that the lady wrote, some months later, to ask what she could use to decolorize a few of the hairs which showed dark in certain lights. Undiluted peroxide of hydrogen was advised, and the result was satisfactory. Mention of the other cases treated would be in the nature of repetition, and is therefore unnecessary. Hairs which regrew were frequently little black ill-nourished stubs, which were easily destroyed, and which would probably have ceased to exist anyhow. The best criterion of results is the patient's opinion; they expect more than the physician often, and if they are satisfied you may well be.

I suppose I have treated by electrolysis almost every kind of mole that exists—the flesh-colored, flat or rounded, the brownish of all shapes, and even a few small soft black ones of the kind so closely related to those which frequently form the starting point of a sarcoma; one mole which was sore and tender, and looked like a red berry, and two in different patients of skin color, tough, hard and fibrous. Six to seven cells of my battery sufficed. As in the de-

struction of hairs, the needle is attached to the negative pole. The smallest were transfixed in a line parallel to the skin, nearly through the base, and the current allowed to pass until the mole became blanched and frothing occurred around the needle. If the mole was large the current was again passed at an angle to the first puncture, and this done a third time in the very large tough ones. In a week or ten days the small ones will have practically disappeared, any the large ones markedly decreased in size. The greatest decline is seen along the line of puncture of the needle, the growth often having a lobulated appearance from this depression. At the point of puncture a small crust forms, sero-sanguinous in character, persisting a few days, then falling without leaving a mark. At times the tops of the smaller moles treated become necrotic and separate. The decrease in size of the moles goes on for some weeks, but the larger and tougher ones will not entirely disappear without repetition of the operation once to a number of times, when we get the natural result, though, we will often be unable to locate the point where the mole was situated. I have never feared setting up a malignant process in these growths, and have seen none of the commonly feared effects of "tampering with moles."

A young lady who was anxious to be rid of numerous moles on her face and neck submitted to the removal of three with the curved scissors, one of the wounds being closed with a fine stitch, and to the treatment of several others by electrolysis—all at one sitting. Being "in society" and anxious for a good result, I would have been informed if she were dissatisfied, but I have no reason to believe that she was disappointed. When the mole is small and superficial it is nicely removable with curved scissors, leaving a faint, white, scarcely perceptible scar which is a vast improvement upon the appearance of the original lesion. A mole which had steadily grown since its

companion above, on the face of a gentleman of sixty-three was treated with a quack "paste," was cut away with scissors, and the wound, having a spongy floor, was cauterized with the nitrate of silver stick. Some months later I was informed that there was a slight tendency to regrow.

Warts tend to spontaneous disappearance—hence the numerous successful "charms" for their removal. I remove the large, unsightly ones with the knife, stitching the edges of the wound together with fine sutures. The smaller ones can be no better treated than by the scissors, any possible remains being destroyed with nitrate of silver or nitric acid. Any small growth can be removed with the curette, but this is a rather harsh instrument.

On the face of a lady of thirty-three there were three deep purple lesions answering to what is known as the "port-wine" mark. One of these—in the center of the left cheek—had only been present eight years, the other two were congenital. The one in the cheek was the size of the finger nail, level with the skin, of a solid purple color. It was destroyed with nitric acid and as soon as the wound was in the proper state of granulation enough bran-sized grafts to cover about half the whole area were taken from the arm to the depth of the superficial capillaries and closely applied to the granulations—all under antisepis. Rubber tissue, wet in bichloride solution, was then fitted on, then a pad of cotton, held with adhesive strips, and finally the edges of the dressing were sealed with ichthyol-collodion. At the end of four days all the grafts had nicely "taken." The final result was a smooth skin scarcely distinguishable from that surrounding it, no remains of the "mark."

A granuloma of uncertain origin upon the carmine border of the lower lip of a lady recently confined. She was thirty-four years old; her mother died of tuberculosis when this patient was a nursing infant. The lesion was said to have resembled a "blood blister" at first. After being "picked"

it grew rapidly to pea size, became papular, soft and bled easily. The "picking" had been done by the patient with a needle. The growth was cut out with curved scissors, bled freely, was cauterized with nitrate of silver. Beginning regrowth in the front was destroyed with the same caustic; spontaneous subsidence of a second attempt at regrowth. It is two years since the operation and there has been no return of the growth.

Most of the lesions of acne vulgaris rapidly subside after puncture and free bleeding, with pressing out the contents where possible. If there is infection when you puncture, a pustule will follow. The indolent, small lesions of acne punctata are easily removable by "knocking off" their tops with the curette. The large indurate masses of diseased sebaceous glands seen about the neck and beneath the jaws in acne, are best treated by incision and thorough scraping out with the curette. This will succeed where swabbing the cavity with pure carbolic acid will fail. Antisepis must not be neglected.

A lima-bean-sized, cavernous nævus of deep purplish color, in the front margin of the hair of an infant, was lightly touched three times with the button point of the Paquelin cautery at a red heat. A seared, brownish look with coagulation of the contained blood resulted, but the result was only temporary. Later, the small Paquelin point was thrust into the cavity, through the skin, and thoroughly "bored around," apparently completely destroying the lesion and cutting off the blood supply. A severe open wound was left which healed slowly, and I have no definite knowledge of the result. These nævi are very hard to effectually destroy. I believe a better operation would be complete excision of the lesion, controlling the hemorrhage with the red hot cautery point, and, at the proper time, either getting the wound edges together or grafting the surface.

A congenital, capillary nævus level with the skin, at birth looking like a thumb print on the cheek of a child now four years old, has been treated with electrolysis at greater or less intervals. Formerly a dull red color, becoming livid under excitement or exposure to cold. Now the site is marked by a faint, smooth scar with a scant, fine net-work of minute red vessels. The needle, attached to the negative pole, was inserted in a vessel, or a small cluster of them, the sponge electrode being pressed to the hand or temple. From four to seven cells were used, according to their condition, the current being continued until frothing occurred and coagulation took place in the vessel treated, as well as sometimes in those immediately around. The positive pole gives a firmer clot than the negative, hence it has been advised to reverse the current for a second, when using the negative pole. The battery lately used has no reversing attachment, and it seems to me that the results obtained have been equally as good as if the current had been reversed. There can be no doubt that this treatment of the case mentioned will finally destroy every vessel and that the faint scar now present will practically disappear with the growth of the child. Owing to the use of chloroform anæsthesia the intervals between the operations have necessarily been long.

In cases of long standing redness of the face, with dilated venules and partial stasis of blood, electrolysis affords satisfactory results. In treating dilated vessels of the skin we get both a coagulation of the blood and something of a solvent action in the tissues. A similar action takes place in treating other growths but is not so well seen. As in other cases, we get here a small crust at the site of puncture, which, falling, leaves nothing to mark its place, unless the current has been too strong, or the punctures too close together.

The superficial use of the cautery or of scarification with

a fine-edged knife will destroy these vessels, but the first would leave more or less scarring, and both are rather frightful to the patient or his friends. The larger vessels are sometimes treated by slitting them longitudinally with a knife, but it is a delicate and rather uncertain procedure.

I have seen a small epithelioma which was treated by electrolysis grow under the stimulation, and finally have to be excised as was first advised. Where possible it is best to thoroughly excise a beginning epithelioma, or any growth which is subject to enough irritation to render it liable to become malignant.

In conclusion, it is only necessary to add that the treatment, of whatever kind, employed, for an anomaly of the skin of any character, must be thorough and complete. Electrolysis is best for the destruction of hairs, of the larger moles and for dilated vessels. The tedium of the treatment is its chief drawback. Other anomalies should receive the ordinary surgical treatment. There are further plans of treating the various skin troubles mechanically but the length of this paper renders it necessary to omit mentioning them at this time.

RARE CASE IN OBSTETRIC PRACTICE, SHOWING HOUR-GLASS CONTRACTION ON FŒTUS

BY O. H. BUFORD, M. D., CARTERSVILLE, GA.

March 11th, at 11 o'cloch P. M., was called to see Mrs. F., *primipara*, age thirty-two years. I found head presentation, left occipito anterior position, body of child in the left hypochondriac region. Pelvis roomy, good deal of adipose tissue. Cervix not entirely obliterated or patulous. I told patient and family that the presentation was all right, but I did not expect the child to be born very soon.

Mrs. F. had been under treatment by my partner, Dr. J. G. Greene, for albuminuria with swelling of face, hands and lower extremities. Had been taking chloroform, twelve drops three times a day. Œdema relieved except in the feet.

Labor continued through the night. On the morning of the 12th but little change, labor continuing through the day and night. March 13th cervix obliterated, os dilated to size of silver quarter, edge thin, being thick and patulous back. Pains continued strong through the night, with patient sleeping some during intermission.

March 14th, os dilated about two inches in diameter, waters forming, uterine contractions weak; patient, and family being impatient at the delay, I called Dr. Greene. He, on making examination, confirmed my diagnosis. Suggested giving fld. ext. ipecac one drop every thirty minutes till pains became strong. Left with promise to return in the afternoon.

By 1 o'clock pains being good, and os dilated, I ruptured the membranes. Labor came on with strong bearing down pains, but almost no descent of the head. I pressed on the breech of the child, as the contraction came on.

Gave chloroform to relieve patient and relax the parts The circular fibers of uterus would be the only ones brought into action, causing a restriction above the pubis. The longitudinal fibers did not contract. This continued for several hours until I was worn out, and the patient becoming discouraged. Dr. Greene having returned, we decided to give thirty drops of fld. ext. ergot and repeat in one hour to stimulate more uniform contraction.

Instructing patient to bear down with the pains, we would lift the child from the left hypochondrum to the center of abdomen. The head slowly descended and forehead rotated to the hollow of the sacrum. Occiput pressing on perineum, owing to rigidity of perineum, delivery was retarded. As the face passed over the perineum it rotated to the left, right shoulder rotating in the hollow of sacrum, presenting at the perineum, left under the pubic arch. Right shoulder being delivered first, showing complete change in position of body after descent of head.

The child, a large female, was asphyxiated. By long and continued efforts it was resuscitated, after there seemed to be no hope, showing that we should not become discouraged too soon in such cases.

There was complete hour-glass contraction on placenta.

Administered chloroform, introduced hand into uterus, and extracted placenta entire, using strict antisepsis. Washed out uterus and vagina with hot carbolized solution. Applied sterilized cloth to the vulva, to be changed every four hours. Ordered quinine, grains iii, at 6, 9 and 12 next morning.

March 15th, mother doing well; child fretful. March 16th, mother resting well, having passed a good night;

child having convulsions every few minutes. Ordered chloral hydrate grain i, bromide potash grains iss, in breast milk, injected in bowels till quite cold to the head, but little relief. Died at 1 P. M.

March 17th, patient having pains in the breast, with the appearance of milk. Ordered a jacket applied, made from half yard of white cloth yard wide, cutting out place for arms and neck, lapping in front and pinned from bottom up close over the breast, bringing the posterior end over the shoulder and pin to anterior, to keep in position, as directed in *International Journal of Surgery*. Kept on ten days. Ordered vaginal douche of hot carbolized water.

Patient made a good recovery, having no more trouble, sitting up after the tenth day.

DISCUSSION ON DR. BUFORD'S PAPER.

Dr. W. P. Williams, of Blackshear: In the use of ergot prior to the birth of the child, I think it is bad practice. It is liable to bring on just what it did in the doctor's experience, a case of hour-glass contraction. Instead of it, to encourage feeble pains, I should use quinine in ten grain doses.

Dr. Buford: I would say with reference to the use of the fluid extract of ergot in bringing on hour-glass contractions, as mentioned by Dr. Williams, that the contractions to my mind existed before giving the ergot. In regard to the use of quinine, I had given her five grains of it every two hours until she had fifteen grains. After that I used the ergot. I think the same state existed before giving the ipecac.

ASPHYXIA NEOPHYTORUM, AN IMPROVED METHOD OF TREATMENT.

By R. J. NUNN, M. D., SAVANNAH, GA.

Somewhere about twenty-five or thirty years ago, or perhaps it may be more, Dr. Harvey L. Byrd laid before the medical profession an original method for the resuscitation of the asphyxiated new born.

According to this plan the infant was taken in the hands back downwards and then rhythmically doubled upon itself.

This method of Byrd's has been lately resurrected and improved up to the requirements of modern science by Dr. J. Harvie Dew, whose very interesting and elaborate article, "Establishing a new method of artificial respiration in Asphyxia Neonatorum by J. Harvie Dew, M. D., *Medical Record*, March 11th, 1893," could be consulted with advantage.

The method which I am about to describe is the one I adopted shortly after Dr. Byrd's was given out. In this method the upper portion of the body is fixed, while the thighs are rhythmically pressed against the abdomen, thus forcing the diaphragm upward into the thoracic cavity and expelling the air, which rushes in when the legs are extended. The manipulation is about as follows:

The infant being laid upon the table or any other suitable support, the operator stands or sits at either side which happens to be most convenient; he slips the hand which is toward the head of the child palm upward under the back, so as to grasp the ribs and be ready to assist in compress-

ing the chest, and expelling the air; this hand also raises the chest, and permits the head, supported by the edge of the index finger, to fall back the distance desired to make extension and raise the epiglottis. The operator next grasps the legs of the infant with his other hand, back upward near the ankles; the index finger inserted between the legs serves to give a better grip.

Now by steadying the body with one hand, and with the other raising and bending the legs upon themselves, and pressing the thighs upon the abdomen, the diaphragm will be pressed up into the chest and the air expelled therefrom. This operation may be assisted by making pressure upon the ribs with the fingers of the hand supporting the back.

Upon making contrary movement the air again enters the chest.

So far of course there is no change from Byrd's method, the only difference being that, whereas in Byrd's method the upper and lower extremities of the body each swing through an arc of say forty degrees, in this one the lower extremities alone move, and pass through an arc equal to the sum of Byrd's two arcs. Thus it will be observed that in mechanical equivalents both plans are the same.

What advantages then the change?

It enables us to call in the aid of the hot bath, while continuing the artificial respiration, and all without additional help; all that is necessary is to have a tub of suitable length, so that extension can be made, have water of the desired temperature in sufficient quantity to cover the chest of the child, but not the mouth and nose, and then proceed with the manipulation as already described.

This plan of resuscitation has been used by several physicians in this city for years and with good results.

IMPURE AND PURE MINERAL WATERS.

BY T. S. HOPKINS, M. D., THOMASVILLE, GA.

On the long list of frauds practiced upon a credulous and unsuspecting people, none surpasses that practiced by the venders of mineral water. In various ways these impositions are practiced:

First: By the sale of factitious "mineral water" manufactured by the barrel in the cellars of drug stores, by a very simple process. Thus, the shop boy fills a barrel with water from the well in the back yard; the druggist runs over the analysis of some famous mineral spring; estimates the amount of the most popular medicinal elements the water contains to the imperial gallon, drops them into the barrel, and immediately a famous mineral spring, with panaceal powers has been discovered.

Not long since a physician in Chicago says he went into a "mineral water" manufactory on a back street and inquired if they could manufacture Waukesha water. The reply was, "Yes, mein herr, ve makes any vater vat you vants." In another place the question was asked, "How in the world can they find water enough to pipe from Waukeshe to Chicago?" The reply was, "The Fox river has a good flow."

Not long since, the agent of a "mineral spring" at Saratoga called at my office with the request, that I would introduce the water from the "spring" he represented to our Northern visitors, assuring me upon the word and honor of a gentleman that it was the only spring at that place that was not "salted" daily.

Second: By false analyses made by subsidized analysts, or by honest analysts from factitious "mineral water" furnished them by the seller.

Third: By the application of the analysis of a famous spring to the water of another spring not containing the same medicinal elements.

By these and other dishonest and unchristian devices, the aqueous vampire fattens on the credulity of his patrons.

At a recent meeting of the American Health Resort Association, at Chicago, Dr. Danforth presented this matter to the serious consideration of the body. I thank him for doing so, and have no doubt this Association will take the necessary steps to suppress this wholesale robbery. With due deference to any action the Association may take in this matter, I would suggest as the most effectual method, the enactment of laws in all the States making it a felony subjecting the perpetrator, upon conviction, to punishment in the penitentiary or chaingang. The law should enact that when a charge of fraud is brought against the vender of the water, the water shall be submitted to the State chemist for analysis, and his evidence, based upon the analysis, should be sufficient to convict or acquit. If it be proven by the analysis that any medicinal elements the water was said to contain were not found, or if found, that they were added to water by the seller, or that the seller had sold water from one spring under the analysis of another, which had been made famous by the analysis of a celebrated chemist, in order to increase the sales of his water, he should be convicted of fraud and punished accordingly.

If the American Health Resort Association and all other Medical Associations in the country will bring this matter prominently and truthfully before the legislatures of the States, we will soon have laws for the punishment of impostors and the protection of meritorious mineral waters. We sometimes find an honest man selling mineral water,

but not often. If one could believe all the absurdities scattered broadcast over the land in the advertisements of the water sellers, he would imagine that a panacea had been discovered which would cure anything from a small size toothache to a full grown hydrophobia, and in a few days, by its disintegrating powers, reduce a renal calculus from the size of a common sized grind stone to the calibre capacity of the uretal and urethral canals.

In this article I wish it to be distinctly understood that I make no attack on meritorious natural mineral waters, or those who sell them. Such waters are medicaments prepared deep down in the bowels of the earth by an omnipotent and inimitable pharmacist, with medicinal powers for which the physician can find no substitute, or the druggist duplicate. I would not, if I could, and could not if I would, detract, or attempt to detract, from the medicinal value of any mineral water, which, after careful observation of its therapeutical action, had proven remedial in disease.

The medicinal value of any mineral water is tested and proven by its therapeutical action when administered as a remedy in disease. If the reports of mineral springs be true, Georgia can boast of a greater number than any other State in the Union. I have promised to investigate the curative powers of the mineral waters of the State and report them. Thus far I have had an opportunity, by three summers of careful personal observation, of testing but one of our mineral springs. Should opportunity be afforded me, I will investigate others, and will do so as carefully and report as truthfully as I do in this article of the Bowden Lithia Springs.

By personal test, careful observation of tests in others, by careful study and comparison of the analyses and therapeutical results with a large number of mineral springs at home and abroad, I do not hesitate to say that in my opin-

ion, based upon personal observation for all that class of diseases for which mineral water is sought, I have no knowledge of any mineral water that offers better or greater hope of relief than Bowden Lithia Springs in Douglas county, Georgia.

There are two springs at this place, distant from each other some one hundred and fifty or two hundred yards. One is known as the "Bowden Lithia Spring," which according to history has been for many long years a popular resort, not only among the Cherokee Indians, who some fifty years ago were in possession of this section of the State, but since, among their white successors for all "troubles of the kidneys and bladder." The following analysis of the water from this spring is by Prof. Pratt:

ANALYSIS OF THE "LITHIA SPRING."

One imperial gallon contains :—

Solid contents	181.248	grains
Carbonic acid as bicarbonate	9.847	"
	191 095	"
Calcium bicarbonate	14.184	grains
Manganesium bicarbonate	10 321	"
Lithium bicarbonate	2.848	"
Ferric bicarbonate	0.215	"
Potassic bicarbonate	3.363	"
Sodium sulphate	16.250	"
Aluminium sulphate	1.326	"
Strontium sulphate	1.022	"
Magnesium sulphate	4.408	"
Calcium phosphate	0.639	"
Sodium chloride	133.708	"
Magnesium bromide	1.691	"
Silicic acid	1.120	"
Iodine, Fluorine, Manganesium, Organic matter	Traces.	
Total contents	191.093	grains.
Specific gravity	1.004	

The other is the "Bromine Lithia Spring." The following is the analysis of Prof. Doremus, of New York, of the water from this spring:

ANALYSIS OF "BROMINE LITHIA SPRING."

Calcium bicarbonate	17.247	grains.
Magnesium bicabonate	2.874	"
Lithium bicarbonate	4.447	"
Ferrous bicarbonate	0·216	"
Sodium chloride	121.783	"
Sodium sulphate	8.032	"
Potassium sulphate	1.466	"
Aluminium sulphate	0.530	"
Strontium sulphate	1.226	"
Calcium sulphate	12.153	"
Magnesium bromide	1.732	"
Silicic acid	1.263	"
Iodine, Manganese, Phosphoric acid, Boracic acid	Traces.	
Rubidium—Traces by spectroscopic analysis.		
Loss on ignition	5.749	"
Total solid residue by calculation	178.718	"
Total solids dried at 130° C.	171.925	"
Carbonic acid in bicarbonates	9.911	"
	181.836	grains.

This is comparatively a new spring, but from the results of its use as a therapeutic agent it is rising rapidly to fame, and will bring fortune to its owner if honestly and truthfully advertised.

Last year, through the columns of the *Climatologist*, I called the attention of the public to the medicinal powers and advantages of this water. I named the class of diseases in which its therapeutic action, under my observation, had given satisfactory results. Among these I named insomnia, anorexia, prostatic irritation, diarrhœa, uricemia, chronic cystitis, dyspepsia, nervous prostration, "overwork," "bilious troubles," and in one case of diabetes. These cases

are given as those treated by the water alone. None but a fool or impostor will try to make people believe that mineral waters are specifics in the treatment of all diseases, whether functional or organic.

The adjuvancy of certain mineral waters to medical treatment in many diseases no one will doubt. Take for instance, syphilis in its tertiary form. No sensible man would believe that such a case could be cured by mineral water alone. Those of us who have had to contend with this oft intractable malady and witnessed its resistance to the best directed treatment with mercury and the iodide of potassium, that medicinal "dii majores" in such cases, would be surprised to witness the results from the same treatment when aided by vapor baths used at spring resorts. The iodide of potassium is said to be administered in heroic doses, as much as from six to eight hundred grains in the twenty-four hours, without the least unpleasant effects. Physicians who practice this treatment at spring resorts tell me that cases which have resisted all treatment at home for years have been cured by this treatment. The seemingly enormous doses of the iodide of potassium "stamp out" the disease, while any excess of dosage which might otherwise produce unpleasant results, is eliminated by the "sweat bath." No one would say that the water cured these cases, while we must admit that without the aid of the water the iodide of potassium could not have been administered heroically, and would have failed to do so.

Take rheumatism—chronic, not acute—for no reasonable man would subject acute rheumatism to such treatment; I believe it is admitted that the pathology of rheumatism involves a morbid principle in the blood. Whether this morbid principle be uric acid, as for a long time believed, or lithic acid, according to Prout, the "Bowden Lithia water" at Lithia Spring, with its potassic bicarbonate and

its lithia bicarbonate, furnishes the remedy; yet the electro-vapor bath, with massage and alcoholic sponging, have to be added to the treatment to insure success. Here, according to the pathology, the water would be the treatment, and the vapor bath, massage and alcoholic sponging the adjuvants.

GOUT.

I have had no opportunity of testing the action of this water in the treatment of gout. The pathology of gout involves a particular morbid condition of the blood, the result of an abnormal accumulation of uric acid. This pathology plainly indicates the use of medicines calculated to neutralize and eliminate this acid from the blood. The reputation of the celebrated Vichy waters in the treatment of gout in France is attributed to the sodium bicarbonate which they contain. While in the Bowden Lithia water there is no sodium bicarbonate, there is a large amount of potassic bicarbonate. Now, as the potassic bicarbonate is not only an efficient neutralizer of uric acid but an active diuretic, and when in combination with uric acid to form the urate of potassium, it will be more speedily and effectually eliminated from the blood by the kidneys than would be the urate of soda, for the simple reason that it is more soluble. In the Vichy waters there is no lithium bicarbonate; in the "Bowden Lithia water" the analysis shows nearly three grains of lithium bicarbonate to the imperial gallon. As the lithium bicarbonate is acknowledged to be the best of all solvents of uric acid, the chemist, as well as the intelligent physician, will see at a glance the superiority of the "Bowden Lithia water" over the Vichy water in the treatment of gout.

DIABETES.

I have mentioned this disease as one in which the "Bromine Lithia water," which, according to analysis

of Prof. Doremus, contains four and a half grains of lithium bicarbonate to the imperial gallon, produced remarkable results. I candidly admit, without the least humiliation, my ignorance of the pathology of diabetes. According to my reading not less than twenty-five pathologies have been presented by writers on the subject, not one of which has been sustained by the treatment indicated thereby. The case mentioned was one of a young man, the son of a prominent official of Alabama. Soon after reaching Lithia Spring, and before commencing the use of the "Bromine Lithia water," Dr. W. H. Whitehead, the courteous physician in charge, informed me that by Roberts' Differential Density method, indorsed by Profs. Flint and Doremus, he was passing eighteen ounces of sugar every twenty-four hours. Being at the Sweetwater Park Hotel with me, I had an opportunity of interviewing him daily. From the history of his case, the daily diminution of sugar in his urine, as well as the diminution of intense thirst and ravenous appetite, his cheerfulness in contrast with his previous despondency, and his gain in weight, warrants my reporting his case as remarkable. Dr. Whitehead tells me that when this young man left the springs the amount of sugar in his urine was "about nil." The treatment was the usual diabetic diet, and a free indulgence in the "Bromine Lithia water." I have acknowledged my ignorance of the pathology of diabetes, and any attempt to explain satisfactorily the *modus operandi* of the water in this case would involve a second plea of ignorance, though I have no doubt it was a powerful factor in the progress of digestion and assimilation. Now, I would not certify that this young man was permanently cured, for it is a well known fact that many like cases, who have derived like benefits at mineral springs, on leaving have relapsed and died. This should convince the diabetic sufferer of the

absolute necessity of remaining for an indefinite period where the benefit has been derived.

CHRONIC CYSTITIS.

Chronic cystitis is another case in which the use of the "Bromine Lithia water" developed remarkable curative results. This was a gentleman from South Florida. In a very pleasant and interesting interview with him, I gleaned the following history and treatment of his case: He had been for a long time suffering from "inflammation of the bladder." His calls to micturate were often from sixty to seventy times in twenty-four hours. He was discharging large quantities of pus. With the hope of relief from his sufferings he went to Poland Springs, Maine. At Poland Springs he was told by the physician in charge that his trouble was stone in the bladder, and advised to go home and have it removed. He concluded, before being cut for stone, he would test the efficacy of the "Bromine Lithia water," and came to the spring. He had been at the spring about two months when I first saw him. At this time the discharge of pus had entirely ceased, and his calls to micturate did not exceed five or six times in the twenty-four hours, and his general health and weight had rapidly improved. The treatment was a free indulgence of the Bromine Lithia water as a drink, and injections of the same water as hot as could be borne into the bladder. When the first injection of two ounces of the hot water was administered it caused intense pain; now a pint may be injected without the least unpleasant effects. All this goes to prove that this man had no stone in the bladder, for no mineral water has ever been discovered that could dissolve a renal or vesical calculus. If I have been correctly informed of the history and treatment of this case, and I have no reason to doubt my authority, it is one in which the "Bromine Lithia water," in the treatment of

chronic cystitis, has evidenced curative powers which warrant its recommendation in all such cases with a prospect of relief.

BRIGHT'S DISEASE.

I do not remember to have seen a bottle of mineral water on sale containing bismuth on which there was not a label, in which the seller did not declare that it never failed to cure Bright's disease. The fallacy and absurdity of such a declaration, to physicians who understand the nature of Bright's disease, are self-evident. There are, however, cases of albuminuria originating in excessive uric acid formation, in which mineral water containing sodic, potassic and lithic bicarbonate, when aided by a vegetable diet, proves curative. It is the physician and the water seller who is to decide, after a careful examination of the case, whether it is one of Bright's disease or lithemic albuminuria. The acidity and the high specific gravity of the urine without evidence of sugar—the recurrent instead of the continued presence of albumin—the deposits of urea and uric acid—the absence of eye symptoms and dropsy, notwithstanding there may be symptoms resembling those present in Bright's disease, would settle the question of diagnosis in favor of lithemic albuminuria. In the former mineral water will always prove a failure; in the latter, aided by non-nitrogenous diet, it will often prove a success. These are the cases of cure of Bright's disease on which the horn blower sounds his loudest note, and the "beloved minister" signs his strongest certificate. I know of no mineral water (on account of the potassic, bicarbonate and lithic bicarbonate which it contains) that would offer greater hope of relief in such cases than that of the "Bowden Lithia Springs."

Diarrhea has been treated by the "Bromine Lithia water" with such satisfactory results under my own obser-

vation as to warrant my indorsement of it as a valuable remedy in such cases.

In constipation I would advise the use of the "Bowden Lithia water," on account of the large amount of sodium sulphate and magnesium sulphate which it contains. Nature has been prodigal in her gifts to this section in furnishing different medicinal elements in two springs almost within speaking distance of each other, to meet the demands of different ailments. During the summer large numbers of visitors are at these springs with all sorts of complaints. In coming to these springs they leave behind them the cares of the household, the cares of business, perhaps a low, damp malarial region, and come into a delightful, dry, bracing climate, at an altitude of twelve hundred feet above the sea level, where relief is found by the use of the water containing the medicinal elements for a restoration to the impoverished blood of its normal constituents. The "dyspepsia," "nervous prostration," "overwork," "anorexia," "insomnia," etc., disappear, and the patient is relieved. At the springs the climate and the water unite their forces for the relief of the patient, producing results which neither could do singly.

As a diuretic, I am satisfied that the "Bromine Lithia water" has no superior in the catalogue of mineral waters.

In concluding what I have to say of the water, I have something to say to all persons visiting mineral springs. It is this: Never listen to anything the man who sells the water tells you of its curative powers. He belongs to that class of business individuals who earn their bread, not in the "sweat of their face," but in commissions on the water they sell, aided by the "sweat of their jaw." I have more than once, in visiting mineral springs, when listening to the explosions of gas from the water-seller, been reminded of an ancient injunction to horn blowers: "He that hath a horn to blow, let him blow it, for if he bloweth

it not, it will not be blown." Always go to the physician in charge, who, after an examination of your case, may prescribe the use of the water. In this, and in no other way, can any mineral water make, or sustain, a reputation. It is a well known fact that Americans know less of the merits of American mineral waters than any other people, for the simple reason that they are not used as prescriptions. This accounts for the large number of our people who annually cross the Atlantic in search of relief from waters far less meritorious than those in their own country.

Lithia Springs has a very decided advantage over other springs in more northern latitudes, in the fact of its being in a climate where those seeking the aid of mineral waters can find them at all seasons of the year. The temperature for spring is about 57°; summer, 73°; autumn, 57°; winter, 48°. I spent the entire month of August last year at Lithia Springs, having with me Hicks' self-registering thermometer. From careful daily observations made during the month, I find the highest was 88°; lowest, 64°; range, 16°; variability, 6°. The prevailing winds were from the south, southeast and southwest. The nights were delightfully cool, always bringing refreshing sleep to the sojourner. The hotel is in the midst of the primeval forest, which affords almost entire protection against the prevailing winds of winter.

There is really no reason why any one should go beyond the limits of Georgia in search of mineral waters or climate, both of which nature has bountifully provided within her limits for all physical ailments that could be benefited by either, from the seaboard, at an altitude of ten feet, with bathing privileges unsurpassed, to the cool, dry, bracing climate of the mountains, at an altitude of three thousand feet.

STERILITY IN THE MALE.

BY C. EVANS JOHNSON, M. D., ATLANTA, GA.

A popular error among the laity, and, indeed, among a large proportion of the profession, in all cases of sterile marriages, and more especially when the female is the more delicate of the two, is to lay the fault at her door. Nor is she slow to accept the situation. It has been the custom for her to consult a gynecologist of more or less repute, submit to examination, and, if deemed necessary, to undergo local and general treatment with the vain hope of correcting this supposed defect, without one thought being given to an examination of the semen of the husband so long as he seemed healthy and was able to copulate and have an ejaculation. But of late years considerable advances have been made in this line by some of the more progressive men in the profession. The truth has gradually become established that ability to perform the sexual act to the satisfaction of both parties does not necessarily imply that the male is imbued with procreative powers.

Sterility in the male does not always have as an accompaniment impotence, as the power to perform the act of coitus is often found unimpaired in cases where the seminal fluid is absolutely sterile. Cases of sterile marriages are often brought to our notice where the husband is found to be potent to a remarkable degree, perhaps, and is able to discharge his conjugal duties perfectly in every respect, but the union remains sterile because of the unfruitfulness of the semen of the male. Indeed, it is a well known fact that so-called impotent men who attempted coitus with a

flaccid penis, have been able to impregnate the female where the semen is normal. Occasionally a report of a case will be seen of conception in the virgin, where the hymen is found wholly intact, and it will be found that to avoid impregnation the ejaculation has taken place at the vulva. It would seem then that the essential factor in the process of conception is the quality of the semen ejaculated.

Semen is the mixed product of the secretions of the testes, seminal vesicles, vasa deferentia, sinus pocularis, prostate and Cowper's glands, together with the mucous follicles of the urethra. The thick, whitish secretion from the seminiferous tubes principally consists of seminal cells, out of which the spermatozoa are developed. The amount discharged at any one time varies with different individuals and at different times in the same individual; ordinarily, however, it is between ten and fifteen grammes. Normal semen has a whitish color resembling very much boiled starch paste, a peculiar, characteristic, heavy odor, and, as expressed by Gross, not unlike that of the raspings of fresh horn or bone, with an alkaline reaction. Immediately after ejaculation its consistence is ropy and honey-like; it soon, however, stiffens like gelatine, to become again yet more fluid in the course of five or ten minutes. Upon pouring the semen into a test tube and allowing it to settle, it will be found to separate into two layers of equal bulk. The upper layer is turbid and translucent, containing only a few cells and some detritus, while the lower layer is white, opaque, and consists of spermatozoa and the cellular constituents of the semen. It is claimed by Ultzmann that from the thickness of the layer containing spermatozoa it is sometimes possible to arrive at a conclusion regarding the generative power of the specimen in question. According to Vaquelin, semen consists of 10 per cent. solid matter and 90 per cent. of water. Of the solid matter 6 per cent. consists of organic constituents, including the

spermatozoa, 3 per cent. of earthy phosphates, and 1 per cent. of alkalies (chloride of sodium). It is claimed by Hoppe-Seyler that semen also contains an albuminous substance called spermatin, which, in its reaction, bears a resemblance to casein.

When a specimen of normal semen has been allowed to stand a considerable time, on the second or third day are found, at first only single, later in greater numbers, colorless, transparent, rhomboidal crystals of phosphoric acid and magnesia, which have been termed spermatic crystals. The quick or tardy appearance of these crystals affords an inference as to the fructifying power of the semen. If a specimen contain many and living spermatozoa, the crystals appear very late, sometimes not until the third day, because crystallization is impossible in a fluid full of movement. If, however, the specimen contain motionless spermatozoa, or none at all, the crystals appear in half an hour.

The spermatozoa of normal semen consists of an oval or flattened, pear-shaped, shovel-like head, and a long thread-like end which is divided into a middle piece and a tail. The middle piece and tail should be at least ten times the length of the head. The spermatozoa should be present in large numbers, and still show movement at least twelve hours after ejaculation.

Semen begins to be secreted about the epoch of puberty, and continues to be formed until an advanced age, though the subject is usually rendered sterile from impotence after the seventieth year. Duplay and Dieu, together with Liegeois, have, however, found that old men in the enjoyment of good health are as able to produce zoösperms as younger men, the latter finding them in thirteen consecutive examinations. Wagner has detected spermatozoa in the fluid emitted by sexagenarians and septenarians. Curling reports them in a man eighty-seven, and Caspar met with them at ninety-six years.

Sterility in the male may be classified thus: Azoöspermism, or the condition in which unproductive semen is secreted; aspermatism, or where the spermatic fluid is not ejaculated; and mis-emission, or the failure to deposit the seminal fluid in the upper portion of the vaginal canal. In the first variety, we have a condition in which intercourse and ejaculation is normal, but the semen secreted is lacking in the essential anatomical elements—the spermatozoa—which may be absent altogether either because they are not formed or because they are unable to be ejaculated through some obstacle seated in the vasa deferentia, or dead because they cannot exist in the medium in which they are suspended. In the second variety, the patient may be wholly capable of copulation, but that act is not concluded with an ejaculation either because of non-secretion of semen or because of some impediment to its passage. In the third variety, coitus is possible and fruitful semen may be ejaculated, but because of congenital deficiencies of the urethra, abnormal positions of the meatus or fistulous openings from the urethra, the seminal fluid does not reach its destination.

Azoöspermism is probably the most frequent of the varieties named. It may be congenital or acquired, permanent or temporary. Of the congenital forms we have bilateral anorchidism, or absence of the testes; cryptorchidism, or non-descent of the testicles, and bilateral deficiencies of the epididymis and vas deferens. The acquired cases are due to various affections of the testes and to obstruction or obliteration of the epididymides or vasa deferentia, or both. They may be permanent, as in the first named instance of congenital bilateral anorchidism, in congenital bilateral dificiencies of epididymis and vas deferens, in complete obliteration of the epididymides and vasa deferentia from gonorrhea, and in cryptorchidism. However, in the latter instance, there is yet some doubt as to whether these cases should be classed among those of permanent azoös-

permism. Poland* and Debrou report cases of married cryptorchids who procreated children. Beigel† speaks of the case of a man whose testes were retained in the groins and whose semen, upon examination, disclosed spermatozoa. And temporary absence of the spermatozoa in perfectly healthy subjects may be induced by excessive sexual indulgence, frequent repetition of the sexual act rendering the semen more and more watery, until finally it consists simply of the secretions of the accessory ducts. Leigeois reports the case of a medical student who indulged in four or five connections daily for ten consecutive days. Examination of the ejaculated fluid showed total absence of spermatozoa, but upon abstinence for a period of three or four weeks, they were found in abundance. Caspar reports an interesting case of this nature, the subject being a vigorous man of sixty years, a naturalist, and father of a large family. He was a very intelligent man and accustomed also to the use of the microscope. The author had interested him in this subject and says: "He examined with me for some time continuously his own semen after coitus. Here we found the greatest variations, which were accurately noted by both of us together. After coitus on the third day, reckoning from the last performance of the act, there was a large number of very small spermatozoa; after renewed coitus on the fourth day, few and small; after a pause of only two days, none; after a pause of only one day there was only a watery sperma in which no zoösperms were found. At another time, on the fifth day after coitus, the zoösperms were very numerous; another time, after a pause of six days, they were few but large in size; four months after the last examination and seventy-two hours after the last act, the zoösperms were comparatively very small, and

* Guy's Hospital Reports, series 2, volume 1.

† Virchow's Archiv.

at another time, on the third day after the last act, they were innumerable. Immediately after coitus, and before emptying the bladder, the urethra was twice examined. Twenty-four hours after the last act, a drop passed out of the urethra exhibited numerous small zoösperms; at another time, after a three days' interval, there was not a single zoösperm."

With the exception of this last variety, the more common are probably those cases of complete obliteration of the tracts of the epididymides and vasa deferentia due to bilateral epididymitis following gonorrhea.

Aspermatism, or that condition in which the patient, whether in coitus or under sexual excitement, is unable to ejaculate semen, is either absolute or relative, permanent or temporary. The absolute and permanent form is somewhat rare, and is either congenital or acquired. Aspermatism may depend upon bilateral anorchidism, obstruction or occlusion of the ejaculatory ducts, absence of sensibility of the nerves supplying the penis, and psychical influences. A case has been observed by Ultzmann in a man forty years of age, who had been married ten years, but had never been able to produce semen. His wife declared that she had never found herself wet with semen after coitus. The patient said that during coitus he experienced the sensation of ejaculation and felt a kind of satisfaction, although he had never seen any semen. In order to prove whether or not the semen regurgitated into the bladder during coitus, the urine passed after the act was examined for seminal constituents, with a negative result. His power had always been very good, though not remarkable. The testicles were small, otherwise his genital organs were perfectly normal. The same author reports another case in a robust young man of twenty-four years. He was perfectly able to perform the act of sexual congress, yet he had never in coitus or as pollution produced a discharge of semen. The young

man had never had any sexual disease. His genital organs were normally formed and examination with the sound met with no obstruction in the prostatic urethra. Faradization of both testicles was tried in order to excite the formation of semen, but without result. In spite of many times repeated coitus and other sexual excitement, the patient was unable to produce semen. The genitals in this second case appeared perfectly normal, the penis capable of erection, the testicles not small, and yet no semen could be produced. In the first case, the testicles were somewhat smaller, but as small testicles are often found which produce normal semen, no absolute conclusion can be drawn as to that. The writer says he can only assume, with Schultz, a non-excitability of the reflex centers of ejaculation. Schmitt and Munroe* report similar cases.

From a study of four cases of anorchidism, Godard found that persons in this condition resemble eunuchs mutilated in early life, in that they have no venereal desire, and while they may have, in exceptional cases, erections, they are absolutely sterile.

More common than the congenital and permanent absence of semen are the acquired forms, which is usually brought about by affections of the prostate, as purulent lobar prostatitis, and where both ejaculatory ducts have become occluded and the glandular tissue of the prostate itself more or less destroyed. Ejaculation may be prevented also by a stricture of small calibre or a tight prepuce. In these cases, however, semen is found to ooze out after coitus is finished. Numerous writers have reported cases of aspermia relieved wholly by circumcision. Reliquet has shown that aspermatism may arise from obstruction of the ejaculatory ducts by sympexions or concretions composed of spermatozoa, epithelial cells, etc. These can usually be detected and

* Boston Medical and Surgical Journal, February, 1869.

broken up by the finger in the rectum, and proving as a rule, only a temporary affection.

A case of non-ejaculation of semen is reported by Curling due to an anæsthetic condition of the nerves of the glans penis. A cure was effected by an application of acetum cantharides to the part which left it in a very sensitive condition. The man subsequently married and ever afterwards rarely failed to ejaculate during coitus.

Aspermatism from the inhibitory action of the brain over the ejaculatory center is a common effection and is always temporary or relative. Patients will be found who, through disgust or suspicion of infidelity, lack of passion, etc., are unable to complete sexual intercourse with their wives or some particular woman, although they succeed with others.

Relative aspermia is especially rare. Here we have a condition in which the semen is not ejaculated during coitus, and yet it is emitted during sleep, and while the semen may be rich in spermatozoa, sterility results in that it fails to be discharged into the genital canal.

Mis-emission, or the failure to deposit the seminal fluid in the upper portion of the vaginal canal, is due to some malformation of the penis of the male as hypospadias, epispadias, congenital malformation of the meatus and fistulous openings in the tract of the urethra which may be the result of traumatism or stricture. However, this affection, while it usually renders the marriage a sterile one, it is not necessarily so, as in exceptional cases, where the semen has been deposited, through a fistulous opening, at the vulva, conception has taken place. This brings to my mind the oft-repeated injunction of the writer's professor of obstetrics, that it was dangerous even for a young man to sit too close on the sofa to the object of his affections. Plastic operations can be practiced in most of these cases

of malformation, and the patient rendered capable of procreation.

There are some other points in connection with this subject which might be referred to, but the object of this paper is simply to direct a channel of thought and investigation along this line, which will naturally result in much good.

SCIENCE IN MEDICINE AND SURGERY.

BY J. M'FADDEN GASTON, M. D., ATLANTA, GA.

In the early history of the healing art, all the devices used were of an empirical nature, not even suggesting any kind of theory or explanation upon which a resort to treatment was based.

Old records touching upon the various medical and surgical appliances seem so absurd that it puzzles any intelligent physician of the present day to believe that a sane man or woman could have fallen into the delusion to adopt such means of treatment. It is not the purpose of this paper to convict the originators of such means as impostors, nor their victims as fools, but simply to adduce the facts in verification of the extreme gullibility of the human race, as to curative agents. This holds not alone in respect to the past, but also in regard to the present era, and has facilitated the sharp practice of quacks in all ages of the world.

After medicine and surgery emerged from the period in which sorcery and witchcraft dominated the people, there commenced a gradual development of measures founded upon the observation of facts, and the record of experience became the standard for the guidance of practitioners. What proved to give relief in given conditions was regarded as applicable in similar cases, and thus a long array of data was accumulated upon which the *materia medica* has been established under the various classifications of purgatives, emetics, etc.

After the discovery of the circulation of the blood by

Harvey, surgery was no longer working blindly as before, and surgical pathology has steadily gained ground, while operative measures have made remarkable advances since that time.

The germ theory of disease has wrought a revolution in the views and practice of physicians and surgeons during late years, which bids fair to place medicine and surgery upon a scientific basis. While there is a vast difference in the opinions of prominent men in the medical profession as to the bacterial origin of disorders, the investigations in progress must ere long culminate in a final adjustment of this question.

That micrococci are associated with the progress of disease, involving the different structures, has been demonstrated clearly by the microscope; and experiments tend to prove that certain disorders are propagated from one person to another by means of such germs. The modes adopted for testing the introduction of microbes into the system have not afforded any conclusive evidence as to the etiological factor in the development of morbid products. But the observation of bacteriologists has gone very far towards establishing the existence of special forms of bacilli in different types of disease. Whether these various modifications of the bacterial order enter as a causative element, or simply as a concomitant of the several disorders with which they are associated, has not been satisfactorily elucidated.

If the investigations should be conclusive in regard to the constant appearance of distinct bacilli in a large proportion of diseases, so as to serve the purpose of diagnosis, it would conduce greatly towards placing medicine and surgery upon a scientific basis. This being attained, the next step to be aimed at is the therapeutic measure, which may prove efficacious in eliminating these morbific agents

from the different structures of the body and correcting their ravages in these organs.

A grave point for consideration in connection with the development of bacteria in the physical organization is whether they are hurtful in the living condition or after losing their vitality and acting as ptomaïnes in the organs. If the analogy of the growth and the decay of hydatids in the tissues can hold in the case of bacteria, it may be inferred that the chief harm results from their death and decomposition.

A very interesting view of the relation of leucocytes to bacteria has been presented by Sutton, claiming that an interminable war is carried on between these infinitesimal antagonists in the organization. If the former prevail health is secured, but in case the latter exert a controlling influence, the result is disease. The object of medical science is to aid the leucocytes.

At this time the medical profession is undergoing a most interesting transition from the extreme views which have been held by some in regard to the employment of germicides in surgical practice. There was a time within the past decade when it was deemed to be scientific and progressive to use antiseptic measures of the most energetic kind in all operations, whether there was a septic element to combat or not. But thanks to the mature investigation of the effects of germicide upon normal structures by bacteriologists of the highest order of qualifications for this class of work, it has been demonstrated that these so-called antiseptic agents are capable of setting up septic processes in healthy tissues. The tables are now turned, and instead of a surgeon being compromised by eliminating germicides from his surgical procedures in ordinary cases, and confining his irrigation of recent wounds to simple sterilized water, it is he who departs from this course by the employment of solutions impregnated with toxic agents who is

held responsible for the consequences of their absorption. There was a time, and that recently, when prominent members of the profession would have gone into a court of justice and testified that another physician or surgeon who had failed to use the so-called antiseptic treatment in a given case had failed to do his duty, if not even liable to a charge of malpractice. But let us consider where this conservative practitioner now stands with the development of science in the researches of bacteriology. When there is a septic contamination in a part, germicides are indicated for the correction of this vitiated condition and should be carried no further than requisite for this purpose. But in case there is a healthy and normal state of structures involved in a cutting operation, there can be no indication for antiseptics and their use is only calculated to do harm by absorption, and the best men in the profession have ceased to employ them.

The most energetic, and hence the most likely to cause mischief, is corrosive sublimate. In a paper by Dr. A. Morgan Vance, of Louisville, in the *Medical and Surgical Reporter*, it is stated that three years ago Welch, of the Johns Hopkins University, made a report in which he mentioned numerous experiments with sublimate to find out something about the action and power of this drug. "I think," says Dr. Vance. "it is proven beyond all doubt by his experiments and by those of his attendants, particularly Abbott, that the present position of bichloride is rather against its use, and that it does more harm than good. If the solution be of sufficient strength to have any effect upon germs, already there, it will cause necrosis and prevent healing of the wound, as well as produce a better nidus for the production and operation of the micro-organisms." In the light of these experiments and those of the experiments quoted in this paper, it is plain that for use in surgical practice the solutions of corrosive sublimate

do not possess the advantages hitherto attributed to them. I may be allowed to refer those who still cling to this idol to the practical remarks of Dr. Vance on the subject, as follows: "Two years ago I ceased the use of solutions, particularly in fresh wounds, and have lately ceased to use them at all, even in suppurating conditions. I have found in my practical work that since I ceased the use of sublimate solutions I have had much more uniformly good results by using simply sterilized water."

In my address at the opening of the session of the Southern Medical College in 1888 I made my position clear upon this subject in the following words:

"With the lights before the profession in regard to the cases of poisoning resulting from even the most cautious employment of recognized dilutions of both carbolic acid and bichloride of mercury in surgical dressings, I am forcibly impressed with the conviction that they should be discarded in all operations upon normal structures." In the discussion upon aseptic and antiseptic surgery before this Medical Association in 1890 I used this language: "The excessive use of carbolic acid and corrosive sublimate as washes to absorbent surfaces cannot be otherwise than hurtful; and the practical results in setting up disorders of various kinds, with not a few fatal results, should be a warning to surgeons against the unnecessary employment of these agents. With proper safeguards in the use of antiseptics surgery will reap benefits; but it has received a black eye from extremists, which can only be remedied by caution in the employment of septic agencies, and seeing the danger, let us avoid it. If we have it in our power to employ antiseptic agents free from risk, it is not good surgery to rush to germicides which are found prejudicial to the otherwise healthy structures involved in an operation; and it is high time that the voice of the profession should

be raised in tones which cannot be misapprehended against this reckless employment of septic germicides."

I am happy to record that now the progressive element in surgery has adopted the standard under which I have battled for many years past. Many will doubtless continue for a time to irrigate fresh cut surfaces with solutions of corrosive sublimate, even in the face of a scientific demonstration of their detrimental effects. But this surgical fad cannot any longer exert its sway over the thinking men of the profession, and like the carbolic spray of quondam repute, corrosive sublimate washes will erelong be among the things that were, a schoolboy's tale, the wonder of an hour.

It may, peradventure, appear to some of my colleagues that I am falling into line with the reform which has been brought about latterly in cutting loose from the prevailing practice of the last decade; but fortunately I am on record in the plainest and most unmistakable terms during all these years as opposing this class of so-called antiseptic surgery in the indiscriminate employment of sublimate solutions in operations. While I have been surrounded with colleagues who insisted upon carrying out the measures inculcated by the extremists in this antiseptic craze, I have at all times and under all circumstances kept up a defensive warfare on the line of conservatism. They will all do me the justice to allow that there has never been any concealment of my views, and even at the risk of prejudice to my professional prestige in the college with which I have been associated, my position has been boldly and openly asserted in the lecture room and elsewhere as inimical to the septic consequences of washing and dressing of fresh wounds with corrosive sublimate solutions.

A theory based upon the claim that all diseases have their origin in the introduction of germs of one or another order may prove the most satisfactory explanation of the

disorders of the physical organization, and should it be made apparent that every special disease has its specific bacillus, science will have made an immense stride in pathology. But when the microscope and other means of investigation shall have demonstrated this as a fact, the more practical useful discovery of remedies adequate to the destruction or elimination of these bacteria appeals with urgency to the therapeutist; and thus far the bacteriologists have signally failed to point out the curative processes, which may meet the requirements. Much is expected from scientific bacteriology and for one I am anxiously looking for a solution of the problem of curing disease by germicides, in some way, which shall not interfere with the vital functions of organs or tissues involved.

In the meantime we must not ignore the time honored principles which have brought us safely thus far in arresting the progress of local and general derangement of the system. Prophylaxis is more important than therapeusis; and the old hackneyed phrase—that an ounce of preventive is worth more than a pound of cure, exemplifies this fundamental doctrine. Jenner conferred the greatest boon upon mankind in the discovery of vaccination as a security against smallpox. Pasteur accomplished a result of no less moment in developing a process of attenuation in the anthrax virus, which put a stop to the ravages of splenic fever. He has in like manner succeeded in so modifying the virus of rabies as to render the canine race insusceptible to this scourge. As a corollary of this demonstration, it has been held that even human beings may be treated during the incubating period of hydrophobia by gradual introduction of the attenuated virus so as to protect the person from the development of this dreadful disease. More recently an innocent virus obtained by the action of gastric juice upon the spinal cords of rabbits, infected with rabies, has been devised by Eusebio Valli, an Italian physician, and utilized

by Centanni as an antidote to hydrophobia by inoculation. Even the widespread fatality of yellow fever has been limited materially in its destructive effects by inoculation with attenuated virus in South America by Dr. Domingos Freire, of Rio de Janeiro.

The outcome of this procedure for mitigating if not preventing entirely the progress of the yellow fever when it prevails is of highest consequence to our Southern population. I have been observing this work, as reported through the newspapers of Brazil, and feel confident that it is destined to bring about important results wherever the yellow fever inoculation is adopted. Out of 11,881 inoculations made by Freire in Brazil, there have only been reported a very insignificant number of deaths, the general mortality being five-tenths of one per cent. of those who were inoculated. In the meantime the fatality of those not inoculated has been very great.

A sad and striking contrast has been presented among our own people in Brazil by the death of five missionaries from the yellow fever who had not availed themselves of the protective inoculation. In the meantime, one who was inoculated, and gave to the world a report of its characteristic influence upon him, has escaped, though frequently exposed to epidemics of yellow fever.

An effort was made some years ago to have a commission of three competent persons sent to Rio de Janeiro by the Government of the United States to report upon the facts connected with yellow fever inoculation. But after the favorable action of the American Medical Association, requesting the President to send this commission, Dr. J. B. Hamilton, of Washington City, succeeded, by special parliamentary tactics, in having the action of that body rescinded. Dr. George Sternberg, of the United States army, in the meantime was sent to Rio de Janeiro, and, as was anticipated, brought back a report adverse to inoculation.

The most notable feature of the past and present status of surgery is the independent attitude of the great mass of the profession in saying and doing what each individual thinks best, having no regard for the dictum of authorities as in former days. We may arrive at a correct idea of the status of surgery then and now by consideration of professors in schools of former days as compared with recognition of others at the present day. A review of the surgery of the brain, thorax, abdomen, rectum, genito-urinary organs, blood vessels, nerves, spine, hip joint, knee and feet of the past with practice at this time, shows vast improvement in all the means of treatment.

It is proper in this connection to advert to the vast increase of facilities for instruction offered by post-graduate schools which were not available prior to the last quarter of a century. If this work was entrusted to experienced men in the different departments, it ought to prove most serviceable to those entering upon the practice of medicine or surgery.

DISCUSSION ON DR. GASTON'S PAPER.

Dr. Willis F. Westmoreland, of Atlanta, opening the discussion: I have been very much interested in Dr. Gaston's paper, and desire to say a few words with regard to antiseptic surgery. If we want to relieve a patient's pain and use opium excessively, we get disastrous results, and it is simply an acknowledgment of the practitioner's inability, because he has not studied the physiological action of the drug properly. The same thing holds good in regard to antiseptic surgery and any man who uses it and has practiced it properly will recognize its value, and knows absolutely that he wards off those dangers which are so frequently pointed out by men who have not learned to use antiseptics. Practitioners illustrate their ignorance of the use of remedies by reporting the disastrous results which have fallen to them. There is not a man who has opened

the skull that understands his business unless he makes use of antisepsis. Of course, if we could get all of the surroundings absolutely clean with perfect cleanliness of our instruments, antiseptic surgery would be unnecessary. But the idea that a surgeon can practice aseptic surgery outside of a carefully prepared hospital is simply preposterous. You get good results, you get union of wounds, but you do not get the same results that you would with the use of antiseptics. In the use of antiseptic surgery I do not think that there has been a death recorded from the use of bichloride of mercury. It is true a case or two have gone the rounds of the journals, but they have been exploded. The case of supposed poisoning in the Pennsylvania hospital was exploded by the whole staff of that hospital. The cases recorded in the *Medical Record* occurred in a foreign country, and were not in general surgery. The only case reported as being true of poisoning from bichloride was one recorded from Chicago. The patient, a man seventy-two years of age, was said to be poisoned after a cystotomy, but the history of the case shows that death was not from bichloride poisoning, but rather to the shock that followed the operation in a man so advanced in years. Although poisoning is a great bugbear, it does not occur if remedies are properly used. If opium or strychnia are used excessively, they will produce disastrous results. It is to be expected that every physician thoroughly studies his subjects and his remedy, and if he gets disastrous results it should be ascribed to his own carelessness, and not to the remedy which he used. I do not think any one who has practiced antiseptic surgery will abandon it. If he does, it is simply because he has not learned the subject thoroughly. Instead of using it properly, he does so improperly, and in that way gets disastrous results.

Dr. W. H. Elliott, of Savannah: I have for some time since given up the use of carbolic acid solutions for cleans-

ing my instruments preparatory to performing operations, because some doubt has been thrown on its germicidal power, and because it was exceedingly disagreeable to the hands of the operator in the strength that we were told was necessary to be of any effect. I have therefore of late adopted the suggestion of Dr. Page, formerly of the University of Virginia, but now of Birmingham, Ala., who suggested the use of diluted alcohol. If you cannot get that there is a fluid that can be found almost anywhere, and that is whisky. I have used it for my instruments when I could not get alcohol.

With regard to carbolic acid, I do not know whether it is a good germicide or not, but I have found in contused wounds where there was a good deal of inflammation no dressing that has given so much relief to the patient, especially colored men, as a mixture of carbolic acid and cotton seed oil. I use the latter because it is cheaper than olive oil. It can be easily gotten, is a pure oil, and does not turn rancid with time. In my operations I have discarded the use of carbolic acid.

With regard to the bichloride of mercury, I have used it freely in operations for years past. I consider that in nine-tenths of the surgery we have to do in this country, away from hospitals with all their appliances, conveniences and purified rooms, that asepsis is practically impossible. If the surgeon were to spend all of his time in getting the room, the patient and everything about him in an aseptic condition, there would be very little time left to do the operation. He has got to do the best he can under the circumstances, that is, make his hands as clean as possible within a reasonable time. No such impromptu effort as that would result in an aseptic condition. I maintain that it is still right to use the bichloride in strong solution, say 1 to 1000, for cleansing the unbroken skin of the patient, and the hands of the operator. For douching the wound

after the operation is commenced, or if there is a wound already made for you, I would not use a solution stronger than 1-2000, and I have not yet seen any evil effect that could be traced to the antiseptic, and I have studied the subject with an impartial mind. If I perform an amputation for instance, and the wound has healed entirely in three weeks, sometimes in less time, and there has not been any elevation of temperature, no evidence of septicæmia or one drop of pus, I fail to see where the evil is. That is a result that is not uncommon in my practice. So in looking the subject squarely in the face, I can see no objection to the use of antiseptics. I know it is said that a profuse diarrhœa is one of the symptoms of absorption of the bichloride. I do not remember ever having seen it in any of my cases. I have not used any solution of the bichloride in an operation for strangulated hernia or in any laparotomy. I believe that when we put such a powerful poison on a membrane so extensive and so capable of rapid absorption, evil effects will follow; therefore I have used sterilized water, but all my patients did not get well.

Dr. T. M. McIntosh, of Thomasville: I do not think there is much difference of opinion between any of the gentlemen who have spoken on the subject of antiseptic and aseptic surgery. I believe antiseptics are proper under certain conditions and upon certain tissues. I also believe just as firmly in asepsis, that is, in the use of sterilized water, as my friend, Dr. Gaston. I would like to ask Dr. Westmoreland if he uses antiseptic solutions upon the peritoneal membrane. He has spoken entirely upon the use of antiseptics in general surgery. I would like to know if in operating for hernia, or in doing a laparotomy, he would deem it necessary to use the bichloride solution in the peritoneal cavity, or whether he would use the sterilized water, thoroughly boiled and filtered? It seems to me that point has not been made clear. Dr. Elliott and

Dr. Gaston agree in regard to the use of sterilized water, but one uses only sterilized water in the peritoneal cavity, and the other uses antiseptic solutions and acknowledges that it is an impossibility to make a clean wound surgically with sterilized water alone.

Dr. Willis F. Westmoreland: The question asked by Dr. McIntosh is not an easy one to answer satisfactorily, because a great deal depends upon whether the surgeon does general surgery, or pelvic and abdominal surgery.

Dr. McIntosh: I mean abdominal surgery, as, for instance, laparotomy for the removal of a tumor, where you do not enter the vagina.

Dr. Westmoreland: Whether you operate in the pelvic cavity or not, I think the essential point of antiseptic surgery and good work will depend very much upon the portion of the abdomen you have to enter, as there is a decided difference between pelvic and abdominal work. In two cases of strangulated hernia operated on by myself, in one for resection of probably six inches of the omentum, the case was a bad one. I operated with thorough aseptic precautions, opening up the sac and thoroughly washing it out with an antiseptic solution, and closing the wound without drainage. In these cases I did MacEwan's operation. There was primary union of the wound in both cases, and the patients got well.

The abdominal work which I have done has been the result of accidents, and in all of such cases I have followed out the same kind of treatment.

As the question of antiseptic surgery is up for discussion, and since my position does not seem to be understood, I would like to add a few additional words. I maintain that antiseptic surgery does not depend upon any germicide the practitioner uses. That is not the principle of it. Antiseptic surgery depends upon absolute cleanliness, but we cannot get it. In addition to that, it means perfect rest

and drainage. Take, for instance, a wound where absorption does not take place, if you close it and do not get proper drainage and rest, you will get pus in the wound regardless of any kind of treatment you follow out. I do not think the principle of antisepsis means simply the use of germicides, but the keeping out of infective material and establishing free drainage, so that you have no secretions present to serve as a nidus for the development of bacteria. In abdominal operations you can establish drainage according to Tait's method by the use of saline cathartics; the alimentary canal will take up effete and poisonous material rapidly.

Dr. F. W. McRae, of Atlanta: It seems to me that the questions of aseptic and antiseptic surgery are being somewhat confused. I do not believe, with Dr. Westmoreland and others, that it is an impossibility to do a surgically aseptic operation. I think we can bring about conditions which are sufficiently nearly aseptic to be of very great advantage to our patients without the application of antiseptic agents directly to normal tissue. I believe with Dr. Elliott that in railway and accident surgery where filth is ground into the tissue, the use of antiseptics is necessary in order for us to get the best results. Whether we resort to antiseptic surgery in the strictest sense or whether we employ aseptic surgery, should depend upon the conditions and upon the proper preparation of the patient and the instruments beforehand. I do not believe we can do away with the use of antiseptics, as they are essential to the realization of ideal surgery. I believe we get much better results where we use antiseptics in the cleaning of our hands, instruments, and in the thorough preparation of the operative field than by applying them directly to the tissues that have been incised by the scalpel. If the surgeon pays proper attention to his dressings, ligatures, and thoroughly prepares the operative field as it should be, his results will

be good. In abdominal surgery, those who get the best results are the ones who do not use antiseptics in the abdominal cavity; they simply use sterilized water. There are many ways by which we can perfectly sterilize water, and in these cases we get better results when we use it than when we resort to antiseptic solutions. I believe all surgeons are agreed that the vitality of the tissues is more or less affected and lowered by the application of strong antiseptics. Where the tissues are normal, it is a well demonstrated fact that they take care of a certain number of bacteria which have gained access to the wound. The theory of phagocytosis, as promulgated by Metchnikoff and others, offers a beautiful explanation of how the pathogenic micro-organisms are developed. Where we have septic material ground into a wound, or a septic wound, then it is absolutely necessary to use antiseptics. As to the value of different antiseptics, each man's experience is his own guide. Lister, after having used bichloride of mercury for a long time, has returned to the use of carbolic acid, his first love. Howard A. Kelly, of Baltimore, has demonstrated that, after scrubbing the hands for five or ten minutes with soap and water, brushing and cleaning the nails thoroughly, washing them in alcohol, and finally immersing them in a bichloride of mercury solution, then dipping them into a prepared culture medium, that in a large proportion of cases he obtained cultures of the germs of putrefaction. He found that these germs had not been destroyed, but had simply been inhibited by the bichloride of mercury.

Dr. R. R. Kime, of Atlanta: The subject under discussion is an exceedingly interesting one, and more particularly to practitioners who are constantly entering the peritoneal and abdominal cavities. It resolves itself into this question, that we are all working for the same end, which is aseptic surgery. Whether we obtain asepsis by

the use of antiseptics, or by the use of water, or whatever it may be, the question is can we in a given case obtain an aseptic condition with the use of water alone? If so there is no use for antiseptics. It is the question of an application of antiseptics in the preparation of the patient, the instruments, the dressings and the operator himself and his assistants. If the surgeon can render himself aseptic as well as the dressings, the instruments and the field of operation, with water, then he has no use whatever for antiseptics. If he cannot do so, then he must prepare himself by the use of antiseptics, and here comes in the question of the use of bichloride of mercury, as tested by Howard A. Kelley, also the use of permanganate of potash and oxalic acid. It was found that by the use of permanganate of potash, and oxalic acid, after the hands had been previously cleansed by soap and water, as was done in the use of bichloride of mercury, that germ cultivations could not be obtained from them. Experiments have also been made and are being made at the present time with citric acid. The question comes to this: If we can get hold of normal tissue and dress it without infection, we have no use for antiseptics.

Supposing we have a wound that is infected, it will be necessary to counteract the septic condition in some way, and it is here where the question of antiseptics comes in. If we have a normal or non-septic wound we have no use for antiseptics.

A short time ago in opening the abdominal cavity, I came in contact with a cyst containing pus in a case of extra-uterine pregnancy. There were multiple cysts. There was not only pus in the cyst, but a decomposing fœtus in the fourth cyst. The question arose whether I should use an antiseptic to counteract the absorption of the septic material that was present, or rely on the use of sterilized

water. Sterilized water in such a case is not sufficient. I would not use bichloride of mercury for fear of poisoning my patient. We have other germicides, and among them is Thiersch's solution. After washing out the cavity with Thiersch's solution, and following it with sterilized water, the patient went one week without the formation of one drop of pus.

Dr. W. W. Stewart, of Columbus: The subject of antiseptic surgery is very interesting to me. I have during my hospital experience assisted in and seen several thousand cases operated on, and I have never had the opportunity of witnessing a case of poisoning by the use of the antiseptics that have been mentioned. If the wounds were properly dressed and the proper antiseptic solution used, they would heal by first intention. If there is not prompt and proper union we can very easily trace it to infective material, or to some stitch. I have never been able to properly satisfy myself that any wound which failed to unite was caused by the bichloride of mercury solution. Thiersch's solution, as mentioned by Dr. Kime, I have used several times where it was necessary to wash out the abdominal cavity, and in abdominal surgery I will say that it is absolutely necessary for a man to fit himself for washing out the cavity properly, because he does not know what he is going to find in the abdominal cavity before he opens it, and then he may find anything from a set of teeth or tuft of hair, to a dead fœtus. We are liable to find pus that gave no signs. The lining membrane may be so indurated and lymphatics so cut off that we have no sepsis tangible. In abdominal surgery it is absolutely an act of negligence to open the abdominal cavity without having provided some antiseptic solution to wash out the cavity if it be needed.

Dr. McHatton, of Macon: I think that in the question of antiseptic and aseptic surgery, like a great many others we can go by no absolute rule. I look upon it as impossible, situated as a great many of us are, to make a thorough aseptic operation; most particularly does this hold true in the cases we encounter in railway surgery. We are therefore compelled to combine the two. We do all we can to establish an aseptic condition, and then resort to antisepsis. A man may do a successful operation without asepsis. Let us take a railroad injury as an illustration. The wound the man receives is a bad one; it is ground up, dirty and perhaps covered with grease. If you make an effort to get a union of that wound by asepsis alone you will have a great deal of trouble, and are therefore compelled to use antisepsis in that class of cases as the wound is already filled with filth. Much depends, therefore, on the immediate surroundings and the class of work the surgeon has to do. Rules that are good in a first-class modern hospital cannot be followed in the ordinary dwellings of the poorer classes.

Dr. J. McFadden Gaston, closing the discussion: I am impressed with the idea that the point made in my paper has been accepted. Moreover, there has been proper consideration of my own attitude with reference to surgical practice. It is claimed that if we use the antiseptics that I have mentioned, we are likely to poison our patients and cause detriment as the result of our otherwise innocent applications in connection with operations. My point in the paper was to present the view of this matter from a bacteriological standpoint, which I supposed all here who practice antiseptic surgery would recognize. I selected the experience of a practical surgeon to quote his individual observations on this matter in connection with the views of men who are well known throughout the whole country as

authority on laboratory work, and among them Dr. Welch, of Baltimore. I presented the views of Dr. Vance, of Louisville, who said he had used corrosive sublimate and this class of germicides with detriment to his patients. He has abandoned them, and his results have been more successful. What more do we want? I could have quoted a number of surgeons and given similar experiences with regard to the antiseptics that have been mentioned. Those who are accustomed to use solutions of corrosive sublimate are not prone to attribute any bad results they may have to it; indeed, they attribute it to anything else rather than to corrosive sublimate. I am an advocate of antiseptic surgery; I practice it upon principle and upon a correct basis. If we do our patients harm by the use of certain antiseptics in trying to combat contamination of the tissues or a disordered condition from germs, we should not use them. I find a good deal of difference of opinion amongst the members of the Association as to the extent to which these antiseptics should be carried. Mr. President, you will notice that my friend, Dr. Westmoreland, completely evaded the question which was pointedly put to him as to whether he would use corrosive sublimate or not in the peritoneal cavity.

Dr. Westmoreland: I simply accepted the good results from its use.

Dr. Gaston, resuming: I think those who have had experience in this line—even Dr. Elliott takes the same position—condemn the use of such agents in the peritoneal cavity, because they are poisonous. They are followed by harm in every instance. It behooves us then to be cautious in using them. We have agents which act admirably in the line of antiseptics, such as thymol, boracic acid, solutions of chloride of sodium, more especially for external use, such agents as spirits of turpentine, etc. I

think, at the same time, that when we need an antiseptic of a more emphatic character, and use it to combat contaminating influences, we will find safety and effectiveness in the permanganate of potash more than in corrosive sublimate. Experience in laboratory work prove these results, and I am fighting on this line. I am fighting against those things that do harm to our patients.

THE DISAPPOINTMENTS OF THE MENOPAUSE.

BY J. C. AVARY, M. D., ATLANTA, GA.

In the following article I propose to discuss some of those conditions which I have found to prevail subsequent to the change of life after a sufficient time had elapsed to produce the good things so much hoped for by the female sex, and too, because in my own experience I have found many hopes not fulfilled. In my clinical teaching at the Southern Medical College and at Atlanta Polyclinic the question has in many ways been asked as to whether or not different maladies would not disappear on the occasion of this state or whether certain things would follow. If I need an apology for this subject you will find it in the paucity of the literature bearing on it. For quite patent reasons I shall include those cases which have been ushered into the dry state by the operation of ovariotomy as well as by Dame Nature unaided by man. However, this point has been made quite prominent. In looking over a number of works on gynecology at my command I find that all the late writers give quite voluminous articles on the indications for ovariotomy and its contraindications, but not one lays any stress on the special care that a woman should receive while passing through the climacteric period. To many patients disappointment has come because they had been led to expect too much from the change. To the ovariotomist, who had not looked beyond the result of the atrophying of the uterus after the removal of the ovaries to see that a diseased condition of the bladder or the ureters

would remain, or by some who had braved the storm and with life had passed the dreaded era to find that nature had done a little too much and that she had now a shortened vagina with such traction or pressure upon the bladder that a constant desire day and night to urinate made life miserable. Or even worse still, with this last named trouble we find combined a general atonic state of all the pelvic muscles and supports of the uterus with no diminution in its size, but rather perhaps an increase of volume and weight which causes it to be prolapsed more or less and in several instances which have come under my observation, a procidentia has resulted. Again, there are those cases in which nervous symptoms have been most prominent and which have been, on good physiological grounds, expected promptly to leave when the menopause had established itself fully, but which not only refuse to behave as expected, but positively do worse.

So far as I have referred to the special disappointments of the menopause, with the possible exception of the nervous class, they are due, I think, to inflammatory conditions, or to the results of the same prior to or during the change of life. They are, therefore, amenable to treatment on surgical principles, and so, whether a woman be expected to have ovariotomy performed or whether she designs to attack that period of her life intervening between forty-five and fifty years without the knife, it is the doctor's special duty, so far as is in his power, to prepare her for the ordeal, and assist her in the proper effort to close accounts with her procreative period. Here it would be unpardonable not to observe the rule of preventing a secondary ill by removing the primary evil or cause, for we know only too well how, especially in this pelvic region at this time, the sympathetic nervous system is ever ready to act as telltale on any abnormal condition, whether it be congenital or acquired by slow development or mechanical injury, and

by the very contiguity of the organs of the pelvis with their connecting ligaments, the whole pelvis is thrown into commotion when this radical and lifetime change is being made even in the most orderly manner and by the best regulated queen of the household.

First, I will speak of the very common condition of adhesions remaining after the menopause has been established both artificially and naturally. Here we have all the reflexes of the nervous system that we had before, and frequently constipation or obstipation by reason of these memechanical conditions.

Case 34. Polyclinic. Mrs. B., fifty years old, two and one-half years since she had flow. Has continued pain in back and lower part of bowels and headache, just as she has had for many years. Examination by the vagina reveals the fact that the small intestines and uterus and ligaments are bound together and on touch are very sensitive. She dates her trouble to the time of having taken cold when she was under thirty years of age, and says the doctor told her that she would be all right when the change of life would take place.

Another class of cases are those where we find an excessive atrophy, but leaving concealed plastic deposits as cicatracial tissue, also giving rise to the continuance of nervous symptoms and providing an irritation of the bladder and rectum.

Subinvolution of the uterus, with atrophy of its muscles and supports, causes a dragging or crowding upon the bladder and rectum, and sometimes even goes so far as to produce complete procidentia.

The onset of heretofore quiescent malignant disease or its development by the cessation of the monthly flux. Since cancer has been called, in its degenerating stage, "*cell necrosis,*" do we not find here an illustration of the correctness of that theory of cancer pathology? For, as soon as the monthly

supply of nutrition is cut off, the tissue begins to die, and we soon have, instead of a freedom from trouble, certain death staring us in the face.

Mental disturbance is oftentimes accentuated instead of being improved by the menopause, even where ovariotomy has been performed for its induction.

Hypersensitiveness of the vulva and vagina continuing afterward is not infrequent.

I have mentioned these causes of disappointment following the menopause to lay stress on the fact that by proper treatment before and during this epoch, they may be obviated in most cases, and in nearly all managed better before the flow ceases than afterwards.

PUERPERAL SEPTICÆMIA.

BY J. I. DARBY, M. D., AMERICUS, GA.

Puerperal septicæmia has, in all civilized countries, been the bane of parturient woman and opened a broad gateway into eternity until within very recent years. We have no satisfactory means of ascertaining the time when this fearful disease was first recognized; but basing our opinions of it upon the present knowledge of its etiological factors, we are justified in supposing that it was necessarily a very common one in the days of man's primitive conditions, as his environments at that early time were such as to make quite common this horrible malady. While it is to some extent properly understood and intelligently treated in many portions of civilized countries, it is and will continue to be the scourge of lying-in woman in the more benighted portions of earth.

Various and conflicting theories have, from its earliest recognition, existed concerning its cause. Many pages have been written to prove its contagious character and much has been said concerning its treatment, but until within the two last decades the medical profession possessed but meager knowledge concerning its true cause and proper treatment.

And even now there is apparent want of unity upon the subject; however, I think it has been pretty satisfactorily established that the same causes which produce septic conditions in the male subject will, under similar conditions, produce the same results in the female, and that puerperal

septicæmia only differs from surgical septicæmia in that the seat of lesions in the former is generally through the parturient canal, whereas, in the latter it may be through lesions on any portion of the body. In a word, septicæmia in a parturient female results from the introduction into the system of the same pyogenic microbes which produce septic conditions in the male, or non-puerperal female. Microscopists, in their examinations of the blood and tissues of those sick with the disease, find the streptococcus and staphylococcus pyogenes coexisting, but it is known that the streptococcus or chain-like bacillus are the true etiological factors and that the staphylococcus exists only as a secondary product, brought about by the streptococcus preparing the parts for their growth and proliferation. Repeated inoculations with the pus and ptomaines from septic wounds into animals produce uniform and characteristic results. Ptomaines from an ordinary traumatism will, when introduced into the abraded genital tract in sufficient quantity within the first five days after parturition, produce puerperal septicæmia.

Now I am not by any means ignorant of the fact that quite a goodly number of our very respectable brethren believe in two separate and distinct varieties of puerperal septicæmia. One variety produced by the pyogenic microbes of which I have just spoken, and the other variety caused by a septic toxæmia due to the effects of chemical poisons evolved during the putrefactive decomposition of certain organic substances, especially of nitrogenous animal products. But with all the scientific light of the closing decade of the nineteenth century shining down upon the subject and the magnifying power of the modern microscope contributing its aid, we are unable to discover any etiological factors other than the pyogenic microbe. We do not believe it possible for organic animal substances to undergo decomposition until they are brought into contact with putrescent bacilli. We believe that sufficient experiments have

been made upon the living human body to prove beyond all doubt that portions of the body may be entirely deprived of nerve and blood supply and yet not undergo any degree of decomposition or putrefaction as long as there is no channel open through which bacteria can find their way to the parts.

Therefore we can accept but one variety of septicæmia, be it of puerperal or surgical origin. In the puerperal woman the genital tract is abraded and made a suitable field for the rapid production and absorption of septic germs, which, finding their way in sufficient numbers through the lymphatics into the blood and tissues, produce their characteristic manifestations in decided pathological conditions. But in order that she may suffer from these micro-organisms, it is necessary for them to come in contact with wounded surfaces of the genital tract, usually within the first five days after her confinement, for after that time in previously healthy women, resolution has so far taken place as to preclude the possibility in most instances of the disease being inaugurated. After this time the wounded surfaces are granulating and not in a condition to absorb pyogenic germs. The primary symptoms of puerperal septicæmia are identically those of septicæmia occurring after traumatisms in the male subject or the non-puerperal female, and the conditions which manifest themselves subsequently, differing from ordinary surgical septicæmia, are due to the peculiarity of the organs locally involved. The disease is usually ushered in with a chill, occurring between the second and fifth day after parturition and may be of variable intensity, and the fever following it is peculiar in that the thermometric curve is irregular throughout its entire course. We seldom witness decided and pronounced intermissions, but frequently notice evening exacerbations, attended with profuse perspirations of acid odor. Diarrhœa is an early and often persistent

symptom. Metastatic abscesses sometimes occur, but when they do the condition is one of pyæmia rather than septicæmia. The pulse, which is usually full in the beginning of the attack, soon becomes small and rapid, and in cases tending towards a fatal issue, small and dicrotic. Thirst is a constant and distressing symptom. The tongue usually presents a red, smooth and shining appearance from the second or third day in bad cases. The temperature, immediately following the initial chill generally runs high, frequently reaching 105° F. within the first twenty-four hours and maintaining a high grade throughout the entire course, but characterized by morning remissions of slight character. Irritable stomach is nearly always present, and vomiting is often an uncontrollable symptom. The pulse very soon becomes quick and small, and in many instances is decidedly compressible from the beginning of the attack. The cadaveric order of the body is noticeable in all severe cases, and frequently distresses the patient as well as those who are compelled to come in contact with her. The urine is scanty from the outset of the disease and presents a decided yellow appearance. The chill is frequently repeated several times during the course of the attack.

One of the most distressing symptoms in severe cases is the pain experienced in the pelvic and abdominal regions, produced by the local inflammation in these parts. Abscesses do not always occur, especially when the case is treated promptly and intelligently from the beginning. I have seen quite a good many cases where the peritoneum was but slightly if at all involved, and yet the symptoms were such as to justify a diagnosis of puerperal septicæmia. The physician who, by his careful treatment of his parturient patients, prevents septicæmia deserves more honor than he who treats it well after it has been inaugurated, for there must necessarily be under all forms and methods of treatment a very large per cent. of fatal cases. In the first half

of the present century the mortality attending it was simply frightful.

Recognizing puerperal septicæmia as I do to be in all cases due to the introduction of pyogenic microbes into the tissues of a parturient woman, and in no instance due to chemical products independent of these organisms, it can readily be seen that I would expect to do far better service in trying to prevent the disease than in treating it after it has been inaugurated. Indeed, I believe it to be within the power of the physician to limit the number of these cases to an infinitesimal few, if not to stamp them out entirely, by a judicious use of antiseptic remedies.

The hospital reports of Philadelphia, New York and other cities, where antiseptic midwifery is practiced, show that the mortality rate has decreased from an alarming figure to almost nothing, and why is this so? If the disease could be produced by chemical ptomaines generated in the uterus or other part of the genital apparatus, independent of germs, why is it that in those institutions where the parturient patient is protected from them she never contracts septicæmia of any variety? I do not believe it possible for toxic ptomaines to generate in the system independent of microbes, and in the instances where such has been supposed to be the case I believe mistakes have been made. To prevent the patient having septicæmia, she should be properly prepared for her confinement by being well bathed and placed in a clean gown and bed at the beginning of labor. The bowels should be well evacuated by an enema, and the vulva and other external parts well washed with good soap and warm water and afterwards rinsed well with a solution of bichloride mercury 1 to 2000. This can readily be done by the accoucheur supplying the nurse with a few seven and a half grain tablets of mercury which he should always carry in his obstetric satchel. The tablet dissolved in a quart of warm water makes the desired

solution. After this preparation of the external parts by the nurse, the physician should give a vaginal douche of the antiseptic solution, after which he should, with thoroughly cleansed hands, proceed to make a digital examination, and, if possible, ascertain the presentation, after which there should be no further introduction of the finger until the rupture of the membranes or the character of the pain indicates the necessity for so doing.

Sometimes, however, when the first stage of labor is tedious and prolonged beyond the ordinary period of time, it is justifiable and even necessary to acquaint ourselves with the condition of the parts by repeated digital examinations, but they should in every instance be preceded by a careful washing of the hands, and in very protracted cases, be followed by an antiseptic vaginal douche. When the second stage of labor has been completed, the placenta should usually be removed within the next twenty-five minutes, by Crede's method if possible; if not possible by this method, it should be done in such manner as the nature of the complication will require, taking great care to inflict as little violence upon the soft parts as the nature of the case will allow. After the placenta has been removed, and the uterus well contracted, we next irrigate the vagina again with our same antiseptic solution, and apply a piece of bichloride gauze over the vulva, which should be replaced several times during each day with other pieces of the same material. When instruments have to be used, they should be carefully prepared, and not allowed to come in contact with the bedding or other septic material after being dipped into antiseptic solution, and if they are anointed at all, it should be with sterilized vaseline, or other lubricant properly treated with carbolic acid, or bichloride mercury. In either natural or instrumental labor, the accoucheur should not fail to carefully examine the external organs of the patient, and if they are lacerated or seriously abraded, he

should treat them according to the indications. If the perineum is lacerated, he should repair it at once; if the vulva is contused or injured, it should be cleansed and treated with iodoform collodion. The antiseptic vaginal douches should be kept up by the nurse for at least the first five days after delivery, and might with propriety be used daily throughout the entire lying-in month. The observance of the above precautions will usually be sufficient to insure the woman against septic infection, and they can be carried out in private practice. I know that thousands of women have been delivered of their offspring without any of the above details being carried out, and made good recoveries, and such will continue to be the case; but I further know that there is not a practitioner of much experience who has not lost cases of septicæmia which could have been prevented by proper antiseptic treatment.

I admit that many women who never heard of antiseptic midwifery have done quite as well as those attended by the greatest disciple of antisepticism, but it is the few who are lost for the want of the proper use of these precautionary measures we are seeking to save. We have nothing to lose by our prophylaxis and much to gain, and if we only save one human life during our whole medical career and do not injure any, we have made ourselves benefactors to our race. When from any reason the disease has been inaugurated, we must proceed to treat it promptly, recognizing that we have one of the most dangerous maladies of which human flesh is heir to combat. The treatment consists in the judicious use of antiseptics and such other remedies as will properly sustain the patient's vitality. High temperature being one of the dangerous phenomena, should be combated with phenacetine and sulphate of quinine, or what may in many cases be better, salicylate of soda or salol in ten or fifteen grain doses every three hours, or by the application of cold water frequently applied. But

one of the most important measures to be resorted to in the beginning of the treatment of cases due to retained secundines, is the thorough and effectual removal of all foreign substances from the vagina and uterine cavity, and this can only be properly done by making the vagina aseptic by the liberal use of bichloride solution and then passing the dull curette into the cavity and carefully scraping its walls so as to remove all exfoliated indometrium and other débris which may be undergoing putrefactive decomposition. After carefully scraping the cavity with the curette, the glass nozzle of a clean fountain syringe should be introduced into it and the parts thoroughly irrigated with a hot 1 to 3000 bichloride mercury solution, taking special care to see that the os is sufficiently dilated to allow a free and easy return of the fluid from the uterine cavity, after which the uterus and vagina should be filled with iodoform gauze, or the uterine cavity may have an iodoform suppository introduced into it, and the vagina lightly packed with the gauze and let remain for a period of about twelve hours, after which the irrigating treatment should be gone through with at least twice in every twenty-four hours, leaving off the curetting usually after the first time, provided it was well done in the beginning. But if there is no evidence of retained secundines the curetting should be omitted entirely. All abrasions should receive careful cleansing and iodoform applications. Abscesses should be carefully opened, washed out and dressed with iodoform gauze, and drainage tubes in suitable cases. The compressible pulse indicates impending danger from heart failure and strongly suggests the use of digitalis and other cardiac stimulants, which should be administered freely from the beginning. Whisky and brandy should be given without stint, regarding their effects rather than the quantity. The pain, which is often a distressing symptom, should be relieved by hypodermics of morphine and atropine and the bowels kept gently lax with saline cathartics if necessary,

but we are generally troubled more by persistent diarrhœa and have to combat that with acetate of lead, opium and other astringents, with the constant use of turpentine stupes and other hot applications over the pelvic and abdominal regions. In some instances it might be well to apply a blister. Whisky and brandy not only stimulate the heart and counteract the toxic ptomaines set free in the system, but act as a food also. We should give them freely, combined with milk and eggs, as well as in the form of toddies. Beef tea and other meat broths should be given as freely as the condition of the patient's stomach will allow. When the stomach cannot retain food, the rectum and colon should be resorted to, but in order not to offend these organs, the quantity injected at each time should be small, consisting of raw eggs, milk and whisky in combination. When the more violent symptoms have been controlled and the patient is improving, I usually prescribe dilute hydrochloric acid and quinine. Muriated tincture of iron in fifteen or twenty drop doses three times daily is an excellent remedy for the convalescent patient, when the bowels are in a condition to retain it. Compound syrup of hypophosphites in teaspoonful doses three times daily also benefit many, and should be given.

DISCUSSION ON DR. DARBY'S PAPER.

Dr. H. McHatton, of Macon, opening the discussion.

Mr. President:

There is one portion of the paper that I should like to hear discussed, and that is the question of the ante-partum douches. When I began to practice medicine a few years ago, every woman was expected to have a douche previous to labor, and one every three to six hours immediately after, the object of which was stated in the paper. We find that it requires practice to give the douches properly, and that it is

almost impossible to have them given in the proper manner by untrained nurses such as we have. We know that the ordinary nurses are not too cleanly. I have seen them drop a syringe, pick it up and introduce it into the vagina, and hence, I have become afraid of using douches in private practice. Then the discovery was made that the vagina was more or less impregnated with bacteria, and that the douches we used did not remove said bacteria, and we could not, consequently, make it thoroughly aseptic, but said bacteria were, as a rule, harmless. I consequently began to use thorough antisepsis with myself and I never examine a woman now without using the bichloride of mercury solution on my hands. At that time I stopped using douches before and after labor, and I have never used them since. I have confined quite a number of women in this manner and I have no cause to regret this method of action. I am very careful about my personal cleanliness and I never examine a woman except my hands are first moistened with a bichloride solution. After confinement I never use douches, except in cases of instrumentation, version, etc., because in these cases I know I am more or less liable to have carried septic matter into the cavity of the uterus. In ordinary cases I use douches after the fifth or sixth day as a matter of cleanliness. Immediately after labor the external parts are thoroughly washed with the bichloride solution, and this washing is repeated every six or eight hours for the first five or six days.

Dr. J. G. Hopkins, of Thomasville: I think all that is necessary is thorough cleanliness of the hands and instruments, if they be used. I indorse to a great extent Dr. Darby's paper, but there is one point upon which I take issue with him, and that is the use of the coal-tar derivatives in the cases he has reported. I have seen several cases of the character mentioned by him. The coal-tar derivatives

are all cardiac depressants, and we want in these cases stimulation from the beginning. We should use nothing that will in any way depress the patient. I look upon quinine as a most important remedy in the treatment of puerperal septicæmia. As you know, it arrests the migration of the white corpuscles of the blood and prevents the formation of abscess, and is, I believe, an antidote to the microbe which has entered the system. Morphine is absolutely necessary to relieve the pain which frequently attends these puerperal conditions.

Dr. Darby: I always use whisky in conjunction with the coal-tar preparations. For instance, in conjunction with whisky I would use phenacetine, but I prefer salol or salicylate of soda. I have had good results with these preparations. I have treated five cases of puerperal eclampsia, and in two or three of them I used phenacetine, and all of my patients are living to-day.

Dr. Hopkins: I would like to ask Dr. Darby to explain why he has had so many of these cases, while we who do not adopt such, as I consider, unnecessary precautions so seldom have them.

Dr. Darby: The cases I have been called to see were those previously in the hands of other physicians who did not resort to antiseptic measures.

Dr. W. P. Williams, of Blackshear: To adjust a point to what has been said in connection with this subject: In resorting to vaginal douches before labor we practically wash away the preparation that nature has formed to forward the delivery of the child. It seems to me that is sufficient reason to condemn the use of douches prior to the birth of the child in cases of normal labor.

It has been said that a woman in the parturient state is on the border-land of a physiological and pathological condition. As long as she is in a physiological or normal state,

all intermeddling, whether instruments, ante-partum or post-partum douches, are absolutely contraindicated. Especially is this apparent in vaginal douches before labor where we absolutely wash away a lubricant which nature has provided to forward the delivery of the child.

PUERPERAL ECLAMPSIA.

BY J. M. HEAD, M. D., ZEBULON, GA.

Perhaps there is known to the medical profession but few diseases whose pathology is more uncertain, or one in which we have a more formidable dread of its occurrence or forebodings than we have in puerperal eclampsia.

These attacks burst forth occasionally upon the obstetrician in his practice as thunder out of a clear sky, but in other cases the impending storm gives us warning by its electrical display, nervously considered; yet again these phenomena pass quietly over and the threatened storm relapses into a peaceful and quiet calm.

Therefore, we are left as the mariner without his compass. From the uncertainty of the etiology of this disease, the question arises, in the solution of these symptoms, what is their cause, and why this disturbance in what should be a normal pathological condition? It is claimed by some that this exciting cause is in albuminuria or its concomitant uræmic disorders, and thus has been the attempt to clear the mysticism of this disease, and while this is generally accepted, yet we know it is not an essential etiological factor in the production of this disease.

There is confusion still existing in the description of this disease, for the reason of confounding several essential diseases under the same name.

We are taught by some to recognize three divisions or classes of convulsions in puerperal eclampsia, the apoplectic, hysterical and epileptic. This makes confusion more confounded, when we remember that the two former belong

to a very different class of diseases. It is nevertheless true that pregnant women may suffer with hysterical paroxysms and epileptic attacks. There is nothing especial in their nature to render them essentially different from similar attacks occurring in the non-pregnant woman. Why, then, should these dissimilar diseases be grouped under puerperal eclampsia?

True eclampsia, however, may differ from epilepsy clinically, but the paroxysms of each are essentially the same.

We find in eclampsia occasionally premonitory symptoms, which, if properly interpreted by the obstetrician, will put him upon his guard, and sometimes enable him to ward off the attack. However, in a considerable number of cases the symptoms are so slight as to escape detection, and suspicion is not aroused until severe convulsions are on.

Hence we find it is of practical importance to bear well in mind the most common of the symptoms which are associated with cerebral troubles, such as severe headache, either general or unilateral, spots before the eyes, dizziness, blindness, vertigo or impairment of the intellectual faculties, which are occasionally observed. Again, we see symptoms manifested in restlessness, irritability of temper, stupor, general indisposition, œdema of the cellular or subcutaneous tissue, shown by swelling of the lower extremities, but this one symptom bears with it a much more serious import when it is observed as occurring in the upper extremities or a swollen face. These symptoms, then, are sufficient to excite the most serious apprehensions and lead us to make examinations of their causes.

Whether the convulsions are preceded by these symptoms or not, doubt can no longer exist when once they occur. The attacks are generally sudden, typically illustrating epilepsy or infantile convulsions.

Observation shows that there is a short period of tonic

spasms of the muscular system. This is followed by clonic contractions, which begin in the muscles of the face twitching violently, horribly altering the expression, with eyes turned under the lids and only the white sclerotic visible, mouth fixed convulsively to one side, with violent grinding of the teeth. These spasmodic movements soon attack the muscles of the body, thereby throwing the whole muscular system into rapidly recurring convulsions. It is evident on observation that the involuntary muscles are involved by the suspended breathing, the voiding the urine and the expulsion of the feces. These clonic symptoms or contractions, lasting from two to five minutes, are followed by stertorous breathing.

In most cases these attacks recur, characterized by the same phenomena, and are repeated according to the severity of the attack with more or less force.

In the light forms there may be but few attacks, but in severe ones they may be indefinite. During these attacks the patient is wholly unconscious, sensibility suspended. This may not be true after the first paroxysms, as she generally recovers her consciousness with not a clear perception of what has transpired, feeling somewhat dazed, with a tendency to somnolency. Should these attacks be frequently repeated, coma, more or less profound, intervenes as a result of the interference of the circulation, which may likely produce cerebral congestion with its unpleasant sequels.

When these attacks occur during labor, the pains are increased usually in force and frequency, thereby showing that the uterus is affected by the convulsive movements. In many cases the advent of a new paroxysm is associated with the beginning of a pain, or *vice versa*.

These are the symptoms we may reasonably anticipate, and as to the results to the mother and child will be dependent on the severity and frequency of the attacks, but

we can safely say they are far better than formerly, from the more perfect knowledge of the nature of the disease and more rational modes of treatment.

Death may be caused by asphyxia, from long continued tonic spasms, which may affect the heart. More frequently, however, death results at a later period from the combined effects of exhaustion and asphyxia. It is also produced by effusion into the ventricles or at base of brain. In this connection it may be said that convulsions may attack the child *in utero* or subsequently at birth, when apparently in good health.

As to the pathology of puerperal eclampsia, it cannot be said that it is settled by any means satisfactorily.

The key to the etiology of this disease was for some time thought to be found in albuminuria of the urine, and all the grave symptoms of eclampsia were thus produced, and this pathological condition of the urine has been abundantly demonstrated by investigations in many cases, but this theory is confronted by the fact that a large per cent. of cases with this condition existing has an immunity from the disease, although they may be chronic sufferers of Bright's disease. It therefore follows that albuminuria is not by any means necessarily a cause of eclampsia, or that eclampsia is necessarily dependent upon albuminuria as an essential factor in its occurrence. Shall we conclude that urea is decomposed and converted into carbonate of ammonia and at this particular period is an essential etiological factor in the production of eclampsia? Yet it is true that the injection of this substance into the lower animals will produce the same convulsive movements and of precisely similar character as those developed in eclampsia puerperalis. To the contrary, scientists disprove that urea has ever become thus decomposed in the blood or that the symptoms of eclampsia were produced in this way.

Experience has demonstrated in the practice of all, that Eclampsia is not dependent upon these conditions, but to the contrary notwithstanding they do more frequently occur when this pathological condition exists. Again, it is claimed that nephritis and detrimental ingredients in the blood irritate the cerebro-spinal system and thereby produce eclampsia, and *vice versa*, that the highly congestive state of the nervous system in this disease is productive of the kidney complications, etc. It is said that cerebral anæmia produces eclampsia, and that the pathological condition results from blood changes incident to pregnancy; also that hydræmic conditions of the blood with albuminuria are ordinarily concomitants of pregnancy. Accompanying those conditions there is an arterial tension, augmented by a hypertrophied heart, and thus are accounted for the serous effusions into the brain, resulting in pressure of its vessels and thereby producing the eclamptic seizures.

Therefore, gentlemen, when we have considered all the theories advanced, and those mentioned are among the most prominent, we are irresistibly driven to the nervous system with all its excitability, with its direct, sympathetic and reflex influences which are but intensified so frequently by pregnancy, to account for this wonderful train of symptoms manifested in this puerperal state. In this condition we find the nervous system is not one in which you can rely with any degree of certainty on any well established facts, or one in which the axiom always obtains, like causes produce like effects. And these facts are of great practical importance in reference to treatment. We know beyond a cavil of a doubt when either of these pathological conditions take place in the non-pregnant that there are certain signs and symptoms which render them a disease or diseases true and simple within themselves. But when we find them accompanying the pregnant stage, and discontinuing upon its completion, then we know they are but

sympathetic troubles superinduced by the pregnancy. So then, later on I will mention more fully the disorders of pregnancy, some of which symptoms occur in so many cases that we can account for them in no other wise than by sympathy or reflex influences, and to the contrary, their association at this particular period may predispose the nervous system to perform subnormal functions. So we may have toxæmia or extremely watery condition of the blood with albuminuria produced by the changes of a healthy normal uterus into one through pregnancy distended to many times its natural size, with its weight and pressure upon certain nerves and blood vessels supplying the pelvis. It is possible through the nervous system that either of the causes enumerated may produce this disturbance, but when they are associated with pregnancy and these affections are not induced, it but demonstrates their lack of a causative influence in eclampsia.

A case in point. Mrs. F., forty-two years old, multipara, conceived with her first child when eighteen years of age, gestation perfect until the close or about two or three weeks prior to confinement, her feet and legs became œdematous, and when confinement came on convulsions supervened lasting for forty-eight hours; finally recovered without any untoward troubles, feet and legs becoming natural in two or three months, when the menses occurred. She was confined about every two years until she had her seventh child and suffered no more convulsions. I was with her in her eighth confinement and at that time she was a sufferer of chronic Bright's disease, and doubtless had been since her first confinement, as she suffered with the symptoms of albuminuria during each pregnancy prior to this. She passed through this delivery without any trouble and was under constant attendance for Bright's disease. The ninth child she conceived with in this condition and of course fearful results were anticipated but this

delivery was safe and normal. She is yet a severe sufferer of chronic Bright's disease with general anasarca.

So in this case she has passed through eight confinements without any convulsive movements, and if albuminuria was cause sufficient she most assuredly would have experienced eclampsia more than once. Yet this pathological condition has existed continuously from first confinement. This case has suffered not only with albumin in urine but has experienced considerable dyspeptic trouble with great or extreme anæmia for the last three or four years. There has been then with her last two or three confinements several exciting causes of eclampsia but a perfect immunity therefrom.

Case 2. Mrs. C., age twenty-seven, primipara, stout and healthy and finely developed woman mentally, physically and nervously, no albumin in urine or any nephritis, suffered no inconvenience save what is usual during gestation, except slight headache. The first intimation of approaching labor was ushered in by a severe convulsion which proved of rapid occurrence and increasing intensity. After the first paroxysm she seemed to suffer with the most intense nervous excitement until she was unconscious of her condition.

Case 3. Mrs. H., who was identically affected as case second, and result the same. Why was such a morbid pathology manifested in a normal condition except produced by the approaching labor, kindling within this nervous system some functional reflex action upon the various organs that are affected in these cases? These cases seemed perfectly normal in every particular save eclampsia. The secretory, nervous, muscular, digestive, circulatory organs all seemed to be performing their essential laws; therefore the nervous system is the only one which could have in so short a time become so exceedingly deranged, and have given rise to the multitude of symptoms as are

experienced in these affections. We find it to be at fault in every other seizure of a similar character, and among these can be enumerated eclampsia infantum, epilepsy with its close similarity of the disease under consideration, tetanus with its cause dependent upon the nervous system, convulsions in teething children from its reflex causes, convulsions from a severe shock or excitement, as a cause produced upon the nervous system.

So it is a reasonable conclusion to suppose from both a theoretical and clinical standpoint that eclampsia is produced from nervous causes, when we consider the heavy gravid uterus pressing upon some of the principal organs of blood supply, thereby producing œdema and albuminuria, and them by reflex troubles producing the various troubles enumerated hereafter.

We account for the many cases of convulsions in children, whether from stomach, bowels, bladder, digestion and other causes, as reflex. We also ascribe to the same cause the convulsions which so frequently occur in them from the mere formation of the pulp in a tooth or indeed the cutting of any of the larger teeth. Also, in traumatic tetanus this principle obtains, and so through the whole category of diseases we find the most exciting symptoms through reflex causes.

Who of you that has had much experience in gynecological and obstetrical work but has seen the symptoms of eclampsia almost identically produced from certain causes in ladies who were troubled with uterine diseases, and perhaps these were so trivial as not to excite suspicion. Tonic spasms are occasionally manifested in them and some such extreme pains in certain parts of the body or head, when in reality all their suffering was reflex and the real cause of irritation was in perhaps the uterus or other reproductive organs.

So then eclampsia should be considered of a functional nature through reflex influences, as chorea is an occasional feature of pregnancy. I will mention simply for the purpose of elucidation some of the prominent disorders of the pregnant stage. Diseases of the kidneys, albuminuria, interstitial and tubal nephritis, diabetes mellitus, icterus and other diseases of the liver, constipation and diarrhœa, neuralgia, ptyalism, disorder of the digestive system, alterations of the blood, with its resultant plethora and anæmia, skin diseases, neurotic diseases, notably among them eclampsia, epilepsy and chorea, and disorders of the special senses; either of these in severe cases may act as a sufficient excitant to beget the dreaded eclampsia puerperalis. Then, the sum total of treatment must be the same as for reflex troubles as developed in other diseases.

TOXIC AMBLYOPIA.

BY JAS. H. SHORTER, M. D., MACON, GA.

As the central nervous system is intimately influenced by noxious substances in the body at large, especially in the nutrient blood current, in like manner certain poisons seem by predilection to expend their energies chiefly on the peripheral nerve trunks, others again on the ultimate filaments; and this latter condition essentially demonstrates itself in impairment or perversion of functions of those most delicate perceptive structures which make up such vital parts of the retina, and to this has been given the name toxic amblyopia.

Amblyopia, meaning simply impaired vision or any other disturbances of sight due to gross choroidal or neuro-retinal lesions, might be traced to toxic causes, but we will confine ourselves to and apply the term only to those cases of apparently functional nature and without very marked structural changes.

I have no intention of wearying you with a long dissertation on the intimate pathology of these phenomena or to elucidate or catalogue the different abstruse theories as to the chemical or physiological mode of action of such pernicious substances, but only to mention briefly the histories of a few cases which I have selected at random from my record book, as being somewhat typical. Nor, do I venture on to anything very new, or claim it as original, either in theory or practice. These cases are chiefly tobacco and alcoholic ones, with brief mention of a few from quinine

poisoning, although, as in other portions of the animal economy, there are various pernicious substances which demonstrate their deleterious influences on these structures, and such poisons may be introduced from without or developed as ptomaines within the organism itself; these latter from fault of perverted metabolism or residual products of retrograde metamorphosis of tissue stored up in the kidneys or liver, although the cause of impairment of vision in such conditions, as well as in that due to syphilis, is ordinarily easily noticeable as degeneration or other destructive changes in the structures themselves.

Amblyopia, in cases of diabetes mellitus, pernicious anæmia and similar dyscrasia, seems to be mostly a disturbance of nutrition in general, as has been suggested by Moore and others.

There are numerous cases of amblyopia from quinine reported, in some of which blindness was complete, for a longer or shorter time. I will only instance a few:

Peschel reports a case, "Boll, d'oculista, Vol. X., 3": The patient, a young woman, took in all four grammes of quinine. The amaurosis did not develop for six days, and was total for a few hours, complete deafness for two days. Intense ischæmia of retina. Improvement gradual. At end of nine months V. was normal, but field remained contracted.

Roosa, Reports, "Trans. Am. Oph. Society, 1887," a case of a young man who, during a convulsion in course of malarial fever, took two or three doses of thirty grains each by the rectum. He only came out of convulsions on third day, when it was found that the pupils were dilated and the sight was gone. Later on the papillæ were white and some vessels very small. Strychnine was given, V. gradually improved until completely restored.

A case was seen by my friend, Dr. Rogers, but I think never reported, in which the patient, a young lady took during an attack of pernicious malaria and within course of

eighteen or twenty hours one and a half ounces of quinine. When seen a week later there was total blindness and deafness, which persisted sometime before perception of light again appeared.

At end of nine months V. $\frac{20}{50}$. Field remained contracted. She regained only one-half of normal hearing.

I will here report only one case which is interesting for the small quantity of the drug taken. S. T., a young man of twenty-five, fairly good constitution, consulted me in 1889 for dimness of sight. Sight had been perfect until a few days before, when a blur appeared before his eyes. He had taken five doses of quinine, ten grains each within two and a half days. I found V. $\frac{20}{50}$, media clear. Ischæmia of retina, some contraction of fields. Diagnosis of quinine poisoning and no treatment except tonics. Two months later sight was normal.

Following the opinion of Roosa, these phenomena (tinnitus, deafness, amblyopia, etc.) of quinine intoxication were regarded formerly as a congestion in their pathology, but such theories have been entirely disproved by more recent observations and by experiments with lethal doses made on animals, which demonstrate that the condition resulting therefrom is one of ischæmia.

Charcot relieved permanently a case of intense chronic trouble with complex symptoms of Menière's disease with large doses of quinine at expense of destruction of hearing. As history of above mentioned cases indicates, the prognosis is good as to recovery.

TOBACCO CASES.

W. L. M., age fifty-two, boatman, consulted me October 8th, 1890. Family and personal history good. Denies syphilis. Takes a drink occasionally, but never to excess. Has smoked since age of twenty, for many years quite constantly; ordinarily smokes a pipe; the one now in use is

quite old and stale. Sight, hearing and other faculties always good until eight months ago, since which time there has been a gradually increasing dimness, noticed first in the left eye, then, some weeks later, in the right. He has put off consulting any one until the great impairment of vision forced him to seek medical aid.

S. P., external appearances normal, media perfectly transparent. Fundus normal, excepting some pallor of optic discs generally slight, but marked in the outer quadrant. No recent hemorrhages nor remains of old ones. V. in R. E. with + 0.75D=$\frac{20}{200}$ and in L. E. with + 1D=$\frac{15}{200}$. Field very slightly contracted, central color scotoma very decided. Urine 1021, healthy Tn. Diagnosis, amblyopia from tobacco. Treatment absolute abstinence from tobacco. Did not deprive him of the very moderate amount of liquor he generally consumed. Kali iodide grains ten, three times daily.

Patient is a reasonable man and obeys directions very thoroughly. October 18th, V. much improved, R. E. $\frac{20}{50}$, with correction L. E. $\frac{20}{100}$. October 25th, S. still somewhat sharper, although has left off iodide since 10th. Recommenced the iodide and allowed some tobacco, four pipes a day. This suggested itself to me as an experiment, through recollections of talks with my friend, Dr. Minor, of Memphis, a most capable oculist, who reported some cases that progressed favorably under systemic treatment in spite of undiminished indulgence in tobacco being continued.

October 31st, has taken iodide, smoked sometime six to ten pipes a day, O. D. $\frac{20}{200}$, showing decided retrogression. Stopped smoking, continued medicine.

November 10th, O. D. $\frac{20}{50}$, O. S. $\frac{20}{100}$. Decided improvement, gradual and certain improvement to December 23d, O. D. $\frac{20}{30}$, O. S. $\frac{20}{50}$. Allowed to smoke *ad libitum* nine

days. January 2d, O. D. $\frac{20}{40}$, O. S. $\frac{20}{70}$, retrogression. Stopped tobacco permanently.

January 20th, O. D. $\frac{23}{30}$, O. S. $\frac{20}{70}$, showed improvement steadily from week to week, rather less during ten days when without iodides.

March 15th, O. D. $\frac{20}{20}$, O. S. $\frac{20}{40}$; March 25th, about the same. Put on strychnine; April 25th, O. D. $\frac{20}{20}$, O. S. $\frac{20}{30}$, very fair color perception central; what final improvement is due to strychnine cannot tell.

Mr. T. G. consulted me January, 1888, age forty-eight, lawyer, family history good, general health always fair. Possibly primary specific infection fifteen years before, but very doubtful. Has been a constant smoker and very greatly since early manhood, and has always drank steadily half dozen or more whiskies a day, but never intoxicated. Sight failing for six months, in right eye probably a longer time, since two months ago can no longer read, even large print. No headache or other uncomfortable feeling, no nausea.

S. P., thin, not robust looking man. Eyes externally normal. Fundus shows slight central excavation (physiological), some pallor of disc, quite decided in external segments. In right eye two or three very small retinal hemorrhages peripheral. Tn. Field little contracted. Absolute central scotoma for red-green. Em-sight R. E. $\frac{20}{200}$ L. E. $\frac{20}{70}$. Urine nothing abnormal. Treatment—iodide, thirty grains a day. Absolute cessation from smoking, and alcohol limited to less than a pint of light red wine at lunch and dinner. Hard trial to give up tobacco, but patient good and obedient. Improvement was most satisfactory, decided and steady from week to week. Six months later O. D. $\frac{20}{30}$, O. S. $\frac{20}{20}$. Strychnine did not have any apparent influence on further improvement. Could again with left eye read Jæger No. 1, with same glass for presbyopia as had been worn too years previously. Before

final recovery again got into habit of drinking spirits, five drinks a day, but no such impairment of sight occurred as followed indulgence in tobacco, as noted in case of W. L. M. Weight increased greatly.

Miss A. G., a well-to-do maiden lady of fifty-two, consulted me in January, 1892, with history of somewhat failing sight, beginning three months previously and first in the right eye. Rather eccentric person and somewhat of a recluse. Family and personal history excellent. Syphilis almost certainly excluded. Sight had been perfect until three months before. No headache, vertigo, nausea nor paretic symptoms. S. P. External appearances and fundus normal. Media transparent, very slight paleness of outer segment of disc. Tn. Field good. V. O. D.—0.75, Ax. 90°, $\frac{20}{70}$, O. S.—0.55, Ax. 90°, $\frac{20}{50}$. Urine S. gr. 1020. Nothing abnormal. Central color perception for red-green poor for a woman. Could find no history or symptom of hysteria.

Diagnosis, by exclusion, of amblyopia potatorum. The abuse of alcohol is not so uncommon in women, even of good society. I remarked that the symptoms would in case of a man have furnished diagnosis of tobacco amaurosis, whereupon she confessed that, unknown to her acquaintances, she had for years been in the habit of smoking quite constantly and enjoyed very strong tobacco. Being much alone she had ample opportunity to gratify her tastes. I ordered discontinuance of tobacco and recovery was complete, though not so rapid as in some more serious cases; possibly she did not so rigidly obey instructions as to abstaining from smoking.

A few lines, in conclusion, as to the history, pathology prognosis and treatment of toxic amblyopia.

From description of cases cited, which in general is that of others reported, it is seen that the symptom complained of is dimness of sight, which is insidious in its origin and

progressive in its course. That the trouble appears as a whole only in those who have smoked for a very long time, many years, therefore it need not ordinarily be looked for in people much under middle age. The duration of the habit, hence, seems to be a more potent factor of causation than the amount consumed, as cases are reported in which the quantity used was quite small.

Alcohol seems to have far less effect than has tobacco in production of this condition, Nettleship and others even holding that it has no influence whatever.

Central scotoma for color is held by some as being absolutely characteristic of tobacco amblyopia; almost always it is for red and green but cases of scotoma for yellow have been mentioned. Hutchinson, Jr., at a meeting of "Oph. Society for United Kingdom," reported seven and one for blue. Frost has seen toxic amblyopia without central scotoma. Gunn has never seen amblyopia in non-smokers. Toxic amblyopia is almost universally binocular, but Doyen, "Oph. Hosp. Report, Vol. XII.," reports a case in which it appeared only in one eye. Berry had some cases of toxic amblyopia in total abstainers, whilst Van Millingen (Trans. Oph. Soc., United Kingdom) reports four cases in foreigners who were not smokers. They were not Turks. Among Turks he had never seen a case of central scotoma from tobocco, although all smoke. This is probably due to the fact that they smoke cigarettes containing only 3 to 4 per cent. of nicotine.

The pathology of toxic amblyopia is essentially a retrobulbar neuritis. This condition has been much studied by Uthoff, Nettleship and others. An axial neuritis has been observed by Edmunds and Lanford in cases of chronic alcoholism.

The prognosis is very generally favorable and prompt recovery can be anticipated, if proper advice be rigidly followed. Likewise danger of relapse seems very slight.

Griffith reports two. Eales has never seen atrophy of disc or blindness follow this condition. Out of one hundred and seventy cases observed in not one did the optic disc get white.

It is the opinion, however, of Berry and other observers that if V. diminish below $\frac{20}{200}$ and the scotoma extend to inner side of fixation point there is no recovery.

Treatment: The one essential thing is the immediate cessation from use of the injurious substance and in most cases this is all that is needed to accomplish a cure. Potassic iodide has seemed to me to be several times of benefit and occasionally strychnine. As to the use of the latter drug, toxic amblyopia is in my experience the only optic nerve or retinal affection in which its administration is of the least benefit; in idiopathic optic nerve atrophy, in papillitis or in atrophy consecutive thereto, or in retinitis of any kind it has in my hands proven valueless.

THE TECHNIQUE AND AFTER-TREATMENT OF OVARIOTOMY.

BY J. B. S. HOLMES, M. D., ROME, GA.

In presenting this paper on the technique and after-treatment of ovariotomy, I offer it as an *exposé* of the methods adopted and successfully used by me in my abdominal work. I submit it with the earnest hope that it may elicit a full and free discussion from all members of this Association who are interested in this line of work. By such discussions our methods may be compared and those adopted that promise best results to our patients. No one can truthfully say that, in every particular, his is the best. While we may, in the main, agree, yet upon slight and seemingly indifferent details may hinge the successful issue of our cases. I stand ready and willing to take up any suggestions from my brother surgeons if I can get better results by so doing. I shall take up each step *seriatim*, and should I be a little lengthy and tedious, I trust the members will indulge me. My remarks will apply chiefly to Tait's operation, "the removal of the ovaries and tubes," although the same general aseptic and antiseptic surgical principles will apply to ovarian tumors and hysterectomy, the chief difference being in the treatment of the pedicle.

THE ROOM.

This should be large, well lighted, well ventilated and heated, with no water-closet, bath-room or lavatory opening into it, for however well the plumbing may be done,

there is always some risk of sewer infection. I prefer a room with a southeastern light, as I like to do my abdominal work in the morning. The patient is then better prepared for it; is stronger and less nervous than when she has to pass most of the day in restless anxiety. When secondary hemorrhage occurs, which it is apt to do, if at all, within the first twelve hours, should it become necessary to open the abdomen to tie the bleeding vessels, you have daylight in which to do it. This I consider quite an important matter, and no surgeon should overlook it, for however careful we may be in the ligation of bleeding vessels, the ligatures do sometimes slip, and we should be prepared to meet the emergency. Of course, in sanitarium or hospital practice, the operating room is specially prepared, and should always be strictly aseptic. In private practice we have to make the best selection of a room that we can, and I would impress upon you that we cannot be too particular to observe rigidly every detail and see that the room and the little furniture required in it should be rendered as aseptic as it can possibly be made. The carpet should be removed, the curtains, pictures and all hangings taken down, and all furniture that is not absolutely necessary should be taken out. If the patient is to occupy the room in which the operation is to be done, you will need a bed, a washstand, a table for the operation, and two or three for the instruments, water, etc. If the walls are ceiled or painted they, with the floors, windows and blinds, should be thoroughly scrubbed with a hot solution of bichloride of mercury 1 to 1000, and the night before the operation the room should be tightly closed and well fumigated with sulphur. In case of plastered walls they should be thoroughly whitewashed, after having been previously dusted. If the walls are papered, after dusting the paper it should be wiped off with a solution of bichloride 1 to 1000. It is also well to use a spray of a 5 per cent.

solution of carbolic acid in the room for an hour prior to the operation, as it gives us a better atmosphere by settling the dust and floating particles. All furniture left in the room should be thoroughly washed with bichloride of the strength previously mentioned. The patient can be safely left in this room after the operation, but everything should be removed from the room and the floor (if at all soiled) thoroughly scrubbed before she comes from under the influence of the anæsthetic. The temperature should never be below 75 degrees Fahrenheit during an abdominal section, and should be kept up to 68 to 70 during the convalescence.

THE BED.

I prefer an ordinary single bed. Of course, in hospitals I would use nothing but an iron bed with good springs and a good, thick, new moss mattress. In my sanitarium, after the mattress had been used by a section case, it was torn to pieces and the moss and ticking thoroughly boiled before it was used again. I prefer to use two beds—one for day, the other for night. This certainly adds greatly to the comfort of the patient, besides giving us an opportunity to air the mattress and bedding. When the patient has commenced to take the anæsthetic a number of rubber bags or tin cans filled with hot water should be placed in the bed she is to occupy, so as to have it thoroughly warmed, as this will greatly lessen the shock. Do not use glass bottles for this purpose, as they frequently break and your patient may be badly burned.

INSTRUMENTS, DRESSINGS, APPLIANCES, ETC.

The instruments required to do a Tait's are very few, and I think it best to have only those actually required to do the work, as they are less troublesome to care for, and are not in the way of the nurse or assistant finding just what you call for, thereby losing no time in searching for

them. Of course a full supply should be in reserve and near at hand to meet any emergency. The following list I find to be quite sufficient:

Two small mouth, tooth forceps, with spring catch.

One straight bistoury, with sharp point.

One straight bistoury, with blunt point.

One pair of knee-bent scissors.

One pair of blunt point scissors, curved on the flat.

One dozen Tait's hæmostatic forceps.

Two long vulsellum forceps, one curved, the other straight.

Two pressure forceps, long.

One Wylie's pedicle needles, nearly straight.

One-half dozen long, straight needles.

One-half dozen long needles, one-half curved.

One-fourth dozen fine cambric needles for the intestines.

One good needle-holder

One-fourth dozen Pryor's sponge-holders.

One grooved director.

One-half dozen drainage tubes, assorted lengths.

These should all be placed in a perfectly clean vessel and boiled for half an hour. They should then be removed and placed in a clean vessel in hot water, which has been previously well boiled and filtered. We should have near at hand a lot of common salt, to be used in hot water in the rectum, in case of severe shock or hemorrhage, rubber bottles for hot water, a large hypodermic syringe and a thermo-cautery, a lot of rubber dam, a Tait's syringe and rubber tubing for sucking the drainage tube, iodoform, iodoform-gauze, bichloride cotton, a spool of two-inch rubber adhesive plaster, a lot of sterilized flannel and unbleached muslin for binders; silk for ligatures and intestinal sutures, silk-worm gut for abdominal sutures, safety-pins and one dozen small, very soft, aseptic sponges—half for sponging the incision, the others for cleansing the abdomen. A

dozen small pads, four by six inches, should be made of sterilized gauze, of several thicknesses, to which a piece of strong silk twelve inches long should be tied. This pad to be used in holding back the intestines. I greatly prefer this to the ordinary flat sponge, which is generally used. I never use it, as it is not only easily torn and small pieces may be left in the abdomen, but is hard to keep aseptic, and too expensive to be thrown away after each operation, which is always done with the gauze pads. When the gauze pad is inserted into the abdomen, always catch the string attached to it with a pair of forceps and drop them beside the patient. I require my nurse, just before the operation, to make a complete and careful list of every instrument, sponge and pad, and before the abdomen is closed the list is checked and everything must be accounted for. A failure to do this, even with the most careful and painstaking surgeon, may cause the death of his patient, for it has happened more than once to some of the most distinguished members of our profession to be chagrined and mortified in making a post-mortem examination to find a sponge, forceps, or other instrument in the abdominal cavity to account for the fatal peritonitis.

WATER.

When I can get it, I use nothing but distilled water, which, in cities, can be easily procured from the ice factories. This is boiled and filtered before using. When this is not to be obtained, I have the water thoroughly boiled and filtered. I never use a chemical of any character in the abdominal cavity. A bowl containing bichloride solution 1 to 1000, I have convenient for emersing my hands during the operation, to remove blood, and then, after being emersed in this solution, they are always dipped in sterilized water before the abdomen is again touched. A vessel containing boiling water should be kept conve-

nient during the operation. At least five gallons should always be prepared, and I have seldom less than ten.

LIGATURES.

For ligatures I use large size twisted or braided China silk for the pedicle. This is always placed in a 5 per cent. solution of carbolic acid and boiled for an hour and then put in alcohol, where it is kept until ready for use. Fine silk for intestinal sutures should be prepared and preserved as above.

SUTURES.

For sutures I use, exclusively, silkworm gut, which I regard, from comparison and experience, as the best material we have. It is easily made aseptic, is strong, reliable, and has never, in my hands, been followed by stitch-hole abscesses, which has been the case with both sterilized silk and silver wire. Have never used catgut, though I would use it for the peritoneum in some cases which will be referred to later.

My silkworm gut is sterilized by placing it in a bottle containing a 5 per cent. solution of carbolic acid. This is placed in a water bath and boiled half an hour. The gut is then placed in alcohol and kept until ready for use. Catgut should be soaked for twenty-four hours in ether, then for twenty-four hours in alcoholic solution of bichloride of mercury, 1 to 200, washed through alcohol and placed in oil of juniper berries, where it is kept until ready for use. When it is removed from this, it should be left for awhile in alcohol, just before being used.

ASSISTANTS.

In my sanitarium, where the most of my abdominal work has been done, I usually have five assistants: two physicians, one to give the anæsthetic, the other to stand opposite to and aid me as directed, and three nurses—one

to hand instruments, one to care for the sponges and the other to take charge of the water. The morning of the operation I take a hot bath all over and put on fresh clothing, and each assistant is required to do the same. Just before the operation, each must, with a brush and tincture of green soap, scrub his or her arms from the elbows to the finger tips, taking special care to use the nail brush freely, for without this precaution septic matter may be retained under the nails. Then a solution of bichloride of mercury, 1 to 1000, is freely used, after which the hands and arms are washed in sterilized water. Each is required to wear a long linen duck coat, which has been boiled and washed in a bichloride solution, 1 to 1000. I admit that all this is trouble, but it takes it to get results, and results are what we want. A slight neglect of this aseptic detail may lead to the loss of your patient, and the surgeon who is most careful to see that strict asepsis and antisepsis is carried out, will have less trouble during the few days following his work, even if his case is conducted to a successful issue.

TOWELS.

A number of towels that have been boiled in a bichloride solution, 1 to 1000, must be on hand, and also a large lot should be kept in hot sterilized water.

VESSELS AND OPERATING FURNITURE.

Three or four wash-basins, the same number of pitchers, two or three vessels for soiled water, two large flat dishes for instruments, a plate or saucer for sutures, a couple of four-quart fountain syringes, and a Kelly's cushion should be provided. As an operating table in my sanitarium, I have used a metal one devised by Dr. Clement Cleveland of New York, and manufactured by Messrs. Hazzard, Hazzard & Co., of the same city. This table is easily kept aseptic. All fluids spilled on it are drained to a central

point and conducted to a slop-basin, thus allowing you to protect the floor from blood and water. The greatest advantage of it, however, is the ease, rapidity and perfection with which you get Trendelenburg's position, which in some conditions is of inestimable value. An ordinary table, not more than two and a half feet wide and at least a foot longer than from the patient's knees to her head (for her feet can be placed in a chair) will answer, and upon this a sterilized blanket, folded three or four times, should be placed, and on this a rubber cloth, and then a perfectly clean Kelly's rubber cushion.

PREPARATION OF THE PATIENT.

Of course in emergencies we have to take the patient without preparation, but when it can be done I much prefer to have charge of her at least a week beforehand. For several days preceding the operation she should be placed rigidly upon a liquid diet. The second night before the operation she is given a mild mercurial purge of calomel, blue mass or gray powder, followed by Epsom or Rochelle salts the next morning if required. The night before the operation she has the vulva shaved, is given a hot bath and thoroughly rubbed all over. She is then given a hot vaginal douche 1 to 2000. The external genitalia are scrubbed with a bichloride solution 1 to 2000; she is given a dose of castor oil and put to bed, the bedding all having been freshly prepared. If she is restless or nervous fifteen to twenty grains of sulphonal should be given to secure a good night's sleep. At six o'clock the next morning she is allowed one-half pint to a pint of hot milk. Just before being anæsthetized she is given a full rectal enema. A vaginal douche 1 to 2000 of bichloride of mercury is used, and the external genitalia again scrubbed with a bichloride solution 1 to 1000. She, of course, is allowed no breakfast except the milk at 6 A. M.

THE URINE.

This should always be examined beforehand, and if any kidney trouble exists the operation should be deferred until this can be overcome, unless there is an imperative demand that it should be done immediately.

ANÆSTHETICS.

I always use Squibb's ether in an Allis' inhaler (which is simple and easily cleaned), unless there is albumin or casts in the urine, or the patient has severe bronchial trouble. In this case I would use chloroform, unless the heart was too soft and flabby. In case there were no casts, but a slight amount of albumin, presumably due to the pressure of a large tumor, I would use ether. The patient, of course, should never see the preparations that are being made for the operation, nor should she see the operating room, nor should the operation be discussed by friends or attendants, as this greatly increases the nervousness, and requires a much larger quantity of the anæsthetic for complete anæsthesia, which undoubtedly increases the shock. All false teeth should be removed before beginning the anæsthetic, or serious trouble may result by the dropping of them into the larynx. She should be thoroughly anæsthetized before being placed upon the table. The anæsthetizer should have a pair of strong flat forceps to draw out the tongue if necessary, and thereby allow a free ingress of air. He should have a good hypodermic syringe with whisky and strychnia tablets convenient. The ether should first be given in small quantities, and it explained beforehand that there is no danger in the slight suffocating feeling that she will undergo. She should be encouraged to take free inspirations at the beginning. After taking a few deep respirations the ether may be largely increased, and she will soon be thoroughly anæsthetized.

CATHETER.

As soon as she is thoroughly under the influence of the anæsthetic, the catheter should be passed and the bladder entirely emptied. This should never be neglected, or the bladder may be injured. It will not do to simply allow her to void the urine just before taking the anæsthetic. I have frequently had my nurse when she was instructed to pass the catheter to say that the bladder had been emptied a few moments before beginning the anæsthetic. I would have her pass the catheter any way, and almost without exception a liberal amount of urine has been drawn, the excitement having caused free diuresis.

OPERATION.

When she is thoroughly under the influence of the anæsthetic she should be carried to the operating table. Her limbs should be well wrapped in blankets and a light blanket also thrown over the chest. The abdomen is now thoroughly scrubbed with tincture of green soap, paying particular attention to cleansing the umbilicus, then with bichloride solution 1 to 1000, then alcohol or ether, after which the entire abdomen, except a small strip in the center, between the umbilicus and pubis is covered with bichloride towels, prepared as previously mentioned, her clothing being protected by rubber clothes. An incision three inches long is now made in the median line, extending within one and one-half inches of the pubis. The incision should always be made with a sharp bistoury in preference to scissors, as a much smoother cut can be made, and the smoother it is the surer we are to get a primary union. The incision should go down to the peritoneum, as it is much better to cut than to tear the tissues with the fingers or the handle of your knife. The blood is sponged away, and if the bleeding is free the vessels are caught up with hæmostatic forceps, and the slight pressure will soon con-

trol all hemorrhage. The forceps should be removed just as soon as the hemorrhage is controlled. Should they remain too long it may cause death of the tissue and result in mural abscess, thereby preventing primary union. It is rare that a ligature is needed, but all hemorrhage must be stopped before the peritoneum is opened. I rarely find it necessary in removing ovaries and tubes to make the opening in the peritoneum larger than two inches. Of course it must be made much larger in case of tumors. The opening should, however, always be sufficiently large to do the work with ease, but should only be large enough for this. The index and middle fingers are now introduced, and the organs brought forward, separating of course all adhesions. If these be extensive it is well to enlarge the incision and put your patient in Trendelenburg's position, in order that you may see what you are doing. Upon Cleveland's table, previously mentioned, you get in a moment Trendelenburg's position with great ease. Great care should be exercised, or the bladder, urethra or intestines may be injured. The ovary and tube when brought out are held by your assistant, and the pedicle is pierced as near the uterus as possible with the needle carrying the ligature, which is now caught by the assistant and the needle withdrawn. The ligature is now cut and the two pieces crossed. One piece is tied with a double knot around half of the pedicle, as near the uterus as possible, so as to allow you to remove all ovarian stroma, for if this is not done you will surely have nervous symptoms afterwards. The other ligature is tied in the same manner around the other half of the pedicle. It is then made to encircle the entire pedicle, and is firmly tied with a double knot. The ligature is cut and the tube and ovary cut at least one-fourth inch from the ligature. If the pedicle is securely and carefully tied, unless you have very soft and friable tissue, you need have no fear of secondary hemorrhage. I have never found it necessary to

sear the end of the pedicle with a thermocautery, which I, however, always have ready and would do if the tissues should be very soft. The other ovary and tube are now treated in the same way.

FLUSHING THE ABDOMEN.

If there is ascitic fluid, extensive adhesions that ooze, or if a drop of pus should escape into the cavity, it should be flushed with boiled water at a temperature of 105°. As already mentioned, I never use anything for this purpose except simple distilled or boiled water that has been filtered. Soft sponges on Pryor's holders should be passed deep into the abdomen with great care and gentleness to remove blood clot in all cases where flushing is not required. All rough manipulation with sponges or the hands should be avoided.

CLOSING THE ABDOMEN.

In simple cases, except very fat subjects with thick abdominal walls, the incision is closed with silkworm gut sutures passing from the skin through all the tissues to and including the peritoneum. The sides of the incision are thoroughly washed with hot sterilized water before being brought together, and all tissue of like character is brought in perfect apposition. The stitches are passed four or five to the inch, and in passing them we should be very careful to avoid the intestines. Indeed, it is my custom to place a sterilized pad wrung out of hot water in the abdomen, so as to press back the intestines and thereby lessen the risk of injuring them, as well as to avoid exposing them to the air. The stitches should not be tied too tight, or we may fail to get primary union.

DRESSINGS.

After the wound has been closed the surface should be freely dusted with iodoform and a piece of iodoform gauze

from one-fourth to one-third inch thick and two by four inches is placed over the incision. This iodoform compress is split so as to fit close to the sutures, which should not be cut too close, as they are stiff and apt to stick the patient, but they should be pressed down so as to rest on the compress. Another pad of the same size and material is placed on the first, and over the sutures. Three or four strips of adhesive plaster, two inches wide, are applied firmly but not too tight, across the abdomen and made to extend two-thirds around the body. This gives support in case of excessive vomiting or great tympany, and takes much of the tension from the stitches. In case the abdomen has to be flushed, or we have any cause to apprehend hemorrhage, the drainage tube should always be used. This will be discussed later. A pad of bichloride cotton half inch thick should be placed over the entire abdomen, and a sterilized flannel binder passed around the body and secured by the requisite number of safety pins, and the patient put to bed.

CLOTHING.

If the clothing has been in the least soiled, fresh articles should be at once substituted. These of course should be convenient in anticipation of such an occurrence. They should be kept warm and ready for use.

REMOVAL OF DRESSINGS.

Should her temperature not exceed 101° to 102°, the dressings should not be disturbed until the seventh or eighth day, when every alternate stitch should be removed, and two days later the others should be taken out. The abdomen should be supported by a binder, which should be worn for at least twelve months. After my patients are able to walk around, I have usually furnished them a support, which is made to correct measurements by Mrs. E. Watson, 1300 Broadway, New York. The measurements

are three in number, and are as follows: First, around the abdomen above the iliac crests; second, around the abdomen below the iliac crests; third, distance between the iliac crests in front, from anterior superior spine on one side to same point on the other.

MURAL ABSCESSES.

Should the temperature, however, go above 101½° to 102°, the dressings should be removed, and unless you have a peritonitis to account for this elevation, you will be sure to find an abscess in the abdominal walls. If the wound is at all red and angry looking, remove two or three stitches, break up the adhesions in the skin, if it has united, with a small probe, and you will be apt to find pus, which should be gently pressed out and the cavity well washed out with peroxide of hydrogen, and a small strip of iodoform gauze should be introduced to secure free drainage. If there is much pus the abscess should be washed out and treated as above mentioned at least twice a day. You need have no fear to remove a stitch after twenty-four hours so far as pus getting into the abdomen is concerned, for the union of the peritoneum is complete after that time. If you have done your operation aseptically you will not have to encounter these abscesses, and great attention to aseptic and antiseptic detail is much easier and less troublesome than treating them; besides, the prevention of them means much to your patient and your own reputation. In subjects where the abdominal wall is very thick, with a great amount of adipose tissue, you may have these abscesses despite all asepsis, and you will surely have them if your stitches are tied too tight.

THICK ABDOMINAL WALLS.

In this class, with much adipose tissue, I think it is best to close the peritoneum with very fine catgut sutures, and the muscle with buried silkworm gut, or close both the peritoneum and muscle with this buried suture, and treat

the balance of the tissue as an open wound, as suggested by Dr. W. R. Pryor of New York, dusting it freely with iodoform, and packing it with iodoform gauze, and allowing it to granulate from the bottom. The kangaroo tendon, so strongly recommended by Dr. Marcey, of Boston, might be used instead of the silkworm gut for the buried sutures, but I have had no experience with it, nor have I had occasion to treat a wound in the manner above described, but I would not hesitate to do so should the proper subject come into my hands.

RAPID WORK.

While I am not an advocate of rapid abdominal surgery to the detriment of the patient, simply for the surgeon to say that the operation was finished in so many minutes, looking more to his own eclat than the safety of his patient, still I do insist that every preparation, to the minutest detail, should be made before the operation is begun, so that no time is lost, for undoubtedly the shock is greatly increased by prolonged anæsthesia and long exposure of the peritoneum and intestines to the atmosphere.

CARE OF THE PATIENT.

The patient should be put to bed as early as possible, and if she is at all cold, rubber bags filled with hot water should be placed around her, and if the pulse is at all weak, a saline solution, one drachm of common salt to a pint of water at a temperature of 105° Fahrenheit, to which an ounce of whisky may be added, should be thrown into the rectum, and if reaction is not sufficiently rapid, whisky may be given hypodermically, and sinapisms applied over the spine and chest. Hypodermics of strychnia, one-twentieth grain, may be given every two or three hours until its physiological effect is shown, or until the heart's action is sufficiently strong. This frequently has a magical effect in sustaining the heart. If the shock is extreme, and the patient shows

unmistakable evidences of sinking, open the abdomen and see if you have hemorrhage, for I think most of the fatal cases that are recorded as shocks are due to secondary hemorrhage. After a laparotomy I never leave the house, however well my patient appears to be doing, for at least twelve hours. I think this is a safe rule.

FOOD.

For the first twelve to twenty-four hours the patient is allowed nothing by the mouth. If the thirst is intense you will be surprised to see the relief that will follow injections of hot water into the bowels. In from twelve to twenty-four hours she can have small quantities of hot water, gradually increasing it, followed in a few hours, if the stomach is not irritable, with a teaspoonful of hot milk, hot peptonized milk or milk and lime water, gradually increasing the quantity at intervals of two to four hours, until an ordinary glass can be taken at a time. For the first week the diet should be entirely liquid, allowing, in addition to the articles above mentioned, beef, chicken or oyster broth, beef tea, beef juice, etc., though my experience in the use of animal broths has not been very satisfactory, as I find they are very apt to disagree with the stomach and ferment. I think, upon the whole, I have had better results from peptonized milk than any other one article. Buttermilk I have found with many patients is not only very palatable but easily digested. I have had most excellent results by giving two drachms of Wyeth's beef juice in four ounces of tepid water, or peptonized milk, thrown into the rectum every four hours. After the first week, if the patient is comfortable, her digestion good and bowels not too inactive, her bill of fare can be very largely increased. Indeed, the usual meal for a person confined to bed may be allowed her by the eighth to the tenth day.

HEADACHE.

For the relief of headache, which so frequently follows the use of ether, I have found nothing that gives better results than the free application to the head of cloths wrung out of ice cold water.

PAIN AND RESTLESSNESS.

While the use of opium is to be deprecated, for it undoubtedly masks the symptoms and deceives us as to the real condition of our patient, still where there is great pain, accompanied with restlessness and inability to sleep, I think it is much better and safer to give a hypodermic injection of one-eighth of a grain of morphia and one-two-hundredth of a grain of atropia, and thereby secure comfort and rest, than to allow her to toss and moan until she is thoroughly exhausted. This is to be repeated only when absolutely necessary. If she finds that it will be given whenever she asks for it, she will frequently demand it when she is really not in very great pain, and under these circumstances I instruct my nurse, where she cannot by moral influence control the patient, unless she is satisfied that she is actually suffering, to give a hypodermic of tepid water, and it is marvelous to see the anodyne effects that will sometimes follow. Opium, as already mentioned, not only deceives us as to the real condition of the patient, but it greatly increases the torpor of the bowels, which so frequently follows sections; and this torpor or paralyzed condition frequently leads to peritonitis, which, however, will be discussed later. In cases that are confirmed opium habitués, do not attempt to withdraw it, but continue the usual dose during the convalescence. In many cases where great complaint is made of pain in the pelvis, hot vaginal douches will frequently give much comfort and in many instances complete relief. Besides the real anodyne

effect it has a fine moral one. She feels that you are doing something for her.

POSITION.

My patient is allowed to lie on her back, or side, as she prefers, from the time she is put to bed, the nurse, of course, turning her and not allowing her to make any exertion. The position, however, that is most comfortable is upon the back with the knees drawn up and supported by placing pillows under them.

VOMITING

from the anæsthesia is best treated by letting the stomach remain perfectly empty. If persistent, give full draughts of hot water and wash out the stomach. This will often give prompt relief. Should it not, a little crushed ice, iced champagne or creosote water may be given, or mustard may be applied over the region of the stomach. The vomiting, however, usually subsides in a few hours. Should it continue after the third day or reappear after that time, the matter presenting a green or greenish tinge, with the abdomen tender, with some tympany, a frequent pulse, regardless of the temperature, you have a septic peritonitis, which will be fully discussed later.

SLEEP

is best secured by a fifteen grain sulphonal powder, followed in two hours by a second dose if required. This I have found always effectual and never followed by unpleasant secondary results. Should the nervous symptoms be aggravated it may be necessary to give bromide of potassium and chloral, though I prefer not to do so if milder measures will answer.

BLADDER.

She is allowed to void her urine if she can from the beginning, and never use a catheter when it can possibly

be avoided. If she is unable to do so a soft rubber catheter is used. It is boiled for five minutes before being used, and is used every six to eight hours. It is always washed in hot water and kept in a weak solution of common salt. Before insertion it is lubricated with an ointment of pure vaseline with ten grains of boracic acid to the ounce. A fresh catheter is used every twenty-four hours. The nurse is instructed to introduce it by sight, as she then does it with less discomfort to the patient and less risk of carrying septic matter into the bladder. Should the bladder become irritable it is washed daily with a solution of four grains of boracic acid to an ounce of water at a temperature of 102°. She is given flaxseed tea freely, Lithia water, citrate of potassa or benzoate of soda.

BOWELS.

I never feel comfortable and easy about a section case until the bowels have been freely acted on. On the third day I usually give one-half grain of calomel every fifteen to thirty minutes until ten grains have been given, unless the bowels have moved freely before that amount has been taken. Never tell her what she is taking, as many have such a prejudice to it that they *know* it will sicken them, and knowing what they are taking, sure it does. If there is much gas in the bowels the first few doses of calomel will add much to her comfort, even should the bowels not move. When the ten grains have been taken, if the bowels have not acted, I give two drachms of Epsom or Rochelle salts or a seidlitz powder every hour until the desired result has been attained. This can be supplemented by hot enemata of two ounces of Epsom salts and four ounces of glycerine to two pints of hot water; or, spirits of turpentine one ounce, olive oil four ounces and hot water two pints, thrown through a long rubber tube high up into the bowels, and repeated, if need be, in half an hour. Excellent results fol-

low an enema of ox-gall four ounces and hot water two pints, given in the same way. The bowels are kept open; made to act daily. I have usually found that nothing answers better for this, after free purgation, as a regular laxative, than one or two pills of aloin, strychnia and belladonna given before breakfast. Occasionally it is well to alternate and give a dose of Epsom or Rochelle salts, calcine magnesia, seltzer or even castor oil. The latter I like very much and use a great deal. When the bowels show sluggishness, before they have moved at all I have frequently found hypodermics of strychnia one-thirtieth of a grain, every three or four hours, to aid the cathartic remedies to an astonishing extent.

TYMPANY.

For the relief of this a hot enema of plain water, with the addition of a little salt or bicarbonate of soda, thrown high into the bowel, or a pint of warm milk of asafœtida used in the same manner, allowing it to either pass off or have it drawn off with a rectal tube, will usually give prompt relief. In some cases where there is much spasm of the sphincter-ani, I frequently have a rectal tube inserted and leave it *in situ* for many hours.

HEMORRHAGE.

When this occurs, primarily or secondarily, make your incision large enough to let you see the bleeding vessels. Put your patient in Trendelenburg's position and tie every bleeding vessel that can be found. Then control the oozing by hot water. If this cannot be done, pack the pelvis with a 20 per cent. iodoform gauze and bring the ends out by the side of your glass drainage tube, which under these circumstances should always be introduced. The gauze can be removed in twelve to twenty-four hours, and the stitches, previously introduced, tightened. The treatment of the tube will be discussed later. Hemorrhage, where

there is no drainage tube, can be detected by chilly sensations, free sweating and a fast and feeble pulse.

PERITONITIS.

When your patient, after the second or third day, begins to complain of nausea, followed by vomiting of a greenish fluid, with distention and tenderness of the abdomen, small, quick wiry pulse, with an anxious countenance, with lips of purplish hue, you may be satisfied that you have a case of septic peritonitis. The temperature is here of little value as a diagnostic indication, but when it is too low in proportion to the pulse it is worth a great deal as a prognostic guide, for with a quick, weak pulse and normal or subnormal temperature the outlook is very grave. I would much prefer, under these circumstances to see a temperature of 102° to 103°. When the above symptoms develop stop all food by the mouth and depend on rectal alimentation. Purge freely with salines and calomel, followed if necessary by high enemata of Epsom salts, glycerine and water, as previously described, repeating every half hour or hour until the bowels are thoroughly unloaded. Resort, if need be, to the enemata of turpentine, ox-gall, etc. Here free purgation is your sheet anchor. The alimentary canal is not only a great drainage tube for the abdominal cavity, but in many cases of septic peritonitis, where we see so often a partially paralyzed condition of the intestines after laparotomy, I think the cause is often due to the fermenting material in the paralyzed bowel, developing poisonous alkaloids, which are promptly absorbed, if allowed to remain there; hence the great importance of freely emptying the intestines and ridding the system of this great source of infection. In addition to this, by free purgation we promote rapid absorption and elimination of septic material, if any should exist in the abdominal cavity. Opium should here be given with

great caution—only enough to quiet the patient. If the vomiting is excessive use large draughts of hot water, repeating from time to time so as to keep the stomach thoroughly washed out. It is truly wonderful to see the quantity sometimes vomited, even where patients have taken no liquid into the stomach. If the symptoms show no indications to yield in forty-eight to seventy-two hours, I would remove a few stitches, break up the union and wash the abdominal cavity freely with hot water, repeating it from time to time as my judgment directed. If the bowels still refuse to act, search carefully for any bands of lymph and break them up. Do not allow your patient to die without giving her every chance.

PHLEBITIS.

When phlebitis, usually in the femoral vein, occurs, I would envelop the limb in cotton batting from the toe to the groin, cover it with a well applied flannel bandage, elevate it and let it alone.

PAROTIDITIS.

This sometimes occurs in septic cases, but it is usually mild and yields to a liniment of camphor, lard and ammonia or the officinal belladonna ointment.

DRAINAGE.

In all cases where you have excessive adhesions, with consequent oozing of blood and serum—ascitic fluid in the abdomen, the escape of even a drop of pus into the cavity, or an injury to the bladder or intestines, by all means drain. I know with some prominent abdominal surgeons there is a strong protest against the drainage tube. Their chief objections are risks of ventral hernia, the introduction of sepsis from without, the damage to the intestine by pressure of the tube, etc. I think these objections are well founded, and are due more to the manner of drainage than

to the drainage *per se*. The tube generally used is too large and too long, is allowed to remain in position too long, is not properly managed, and is not aseptically treated. I use Price's glass tubes, made by Mr. James T. Swift, of Philadelphia. This tube is not much larger than a lead pencil, is hard to break and has an expansion at the top to allow it to be supported by the dressings, and has numerous perforations extending about one-third of the length of it, beginning at the bottom. This tube is rendered aseptic, as previously described, and is introduced into the lower angle of the incision, and two stitches, one below and the other above it, are not tightened, but their ends simply tied, until the tube has been removed, when they are tightened and the opening closed. The tube is passed well down to the floor of the pelvis into Douglas's cul-de-sac. The dressings of the two thicknesses of iodoform gauze and the rubber plaster are applied as previously described. A piece of rubber dam, such as the dentists use, about ten inches square, is punctured in the center with your forceps and stretched until it will go over the tube. When this stretching is removed it will retract and hug the tube closely, thereby allowing no fluid, should it be spilled on it, to soil your dressings, and hence run the risk of contaminating the wound. A handful of loose iodoform gauze is now thrown on top of the tube and the four corners of the rubber brought together and secured with a safety pin. Bichloride cotton is now spread over the abdomen and a many-tailed bandage passed around the patient and secured with pins, allowing the tube to project above between two of the tails. A lot of loose cotton is now applied around the tube, extending above it, and a loose binder put around the patient to secure it. By this means the clothing and covering makes no pressure on it. The nurse is provided with a good syringe and several feet of small rubber tubing that will fit over the nozzle

of the syringe. This, after having been boiled for a few minutes, is kept in a 5 per cent. solution of carbolic acid. Each time the drainage tube is sucked, eight inches of new rubber tubing is cut off and washed in warm sterilized water (which is always kept at hand) before using. The nurse, before touching the tube each time, is required to wash her hands in a bichloride solution 1 to 1000. Pardon the digression, but here allow me to say that there is nothing more important in conducting successful abdominal work than nurses that are scrupulously clean in every respect. I make this an important consideration in employing my nurses, and will dismiss them as quickly for untidiness in person as for any other cause. Find one who is not tidy in her own person and you cannot make her so in her work. Just here I will further add that no nurse should ever be allowed with a section case who has recently been with a suppurating surgical case or with a contagious or infectious disease.

The tube at first is sucked every ten or fifteen minutes, according to the quantity of fluid drained, and every drop should be saved and measured. As the flow decreases the intervals are lengthened and when only a drachm per hour is drawn, it is sucked only once an hour, and when the quantity is only a drachm in two hours, the tube is removed. It is not often that it remains longer than twenty-four to thirty-six hours, except in pus cases where it may be necessary to wash the abdomen through it. It is then sometimes necessary to allow it to remain several days and even replace it with a small one of rubber. I think a serious mistake is often made by leaving it in too long. For fear of pressure of the bowel, in one-half to an hour from the time it is placed in position, I instruct the nurse, when she goes to suck it, to raise it a little, give it a slight rotary motion to remove any lymph that may plug up the drainage holes, and to place a few thicknesses of iodoform

gauze around it under the rubber dam. This effectually prevents any pressure on the viscera. This is repeated from time to time until the tube is withdrawn. The tube is not only a great means of preventing sepsis when properly used, by removing all material from the abdomen that might be present as a hotbed for the development of pathogenic germs, whether already present, introduced by unclean instruments or from fluids that have escaped from pus tubes, abscessed ovaries, injured bowels or bladder, but it also has a great hæmostatic effect by drying the peritoneum. Again, it is certainly a great comfort to the surgeon, when he sees his patient reacting slowly, to know that there is no internal hemorrhage, for if you have it with the tube you are certain to know it before your patient is so exsanguinated that it is often too late to save her, even though the abdomen be opened and the hemorrhage controlled. In cases of prolonged shock, where hemorrhage is suspected and you have no tube in the abdomen, should it be opened and no hemorrhage is found, the shock is greatly increased and the chances for recovery greatly lessened. Certainly there could be no greater argument in doubtful cases, that is, in those where we have the least apprehension of hemorrhage, in favor of using the tube. I have never had a ventral hernia or an injury to the viscera to follow its use.

GRANULATIONS.

Where a wound fails to unite primarily, I would treat the granulations by curetting them, and afterwards, if necessary, with nitrate of silver, aristol, iodoform, benzoated oxide of zinc ointment, etc., etc.

SINUSES.

A sinus may occur, which is generally from a ligature, and will not close until it works out or is artificially removed by a horse hair probang or something of the kind.

These sinuses sometimes remain open for a long time, two or three years. Happily I have never had one to contend with.

LENGTH OF TIME IN BED.

I have never allowed my section cases to sit up under three weeks nor to leave the room under four. They frequently appear sufficiently strong and well to be up at an earlier period, but if I err I wish to do so in their favor.

DISCUSSION ON DR. HOLMES'S PAPER.

Dr. V. O. Hardon, of Atlanta, opening the discussion: *Mr. President:*

I recognize the value of time in this Association, and I will not consume very much. I wish to say a few words, however, in regard to the paper of Dr. Holmes. It is an admirable *résumé* of the principles that govern abdominal operations. There are two or three points that I wish to speak about. In the first place, I wish to say as a result of my experience in abdominal work, that I do not believe it makes one particle of difference in what kind of a room a man does an abdominal section, what surroundings are in the room, whether a carpet is on the floor or curtains on the window; whether it is a perfectly aseptic room in a hospital or a negro hovel, provided there is no infection of the wound during the operation or of the abdominal cavity by any poison, or by any unsterilized object coming in contact with it. I say this advisedly. I have done a considerable amount of abdominal work among charity (negro) patients. I have operated in the filthiest negro hovels in the city of Atlanta, and I have operated amid surroundings which would appall a man if he believed success was dependent upon surroundings, and I never yet have lost but one negro patient, and that patient was operated upon and died at the Grady Hospital. If we keep the wound thoroughly sterile

from the time of operation; if the hands, instruments and sponges that are brought in contact with the wound are thoroughly sterilized, if the wound is dressed in such a way that nothing can come in contact with it from the atmosphere during the few hours necessary for primary union to take place, we can get as good results in a negro hovel as in a perfectly aseptic hospital. One of the most essential points in doing all abdominal work is simplicity of operating. The fewer instruments, fewer sponges and fewer assistants we have the less danger there is of infection of the patient during operation. In a simple oöphorectomy, without the presence of a tumor, we have the simplest and easiest operation that one could possibly conceive of. If we reduce that operation to its utmost simplicity, it can be done with three or four instruments and two assistants, one to give ether, the other to assist in the operation, if the proper preparation is made beforehand. If no time is lost in preparation, such an operation can be done in a few minutes. I have done the operation in twelve minutes from the time of making my incision to tying the last suture. I consider such simplicity one of the essential factors in the success of abdominal surgery.

In regard to the minor details it matters very little what methods a man adopts, whether for instance, he uses catgut, silk or kangaroo tendons for sutures, provided what he uses is thoroughly aseptic. I would just as soon use a piece of cotton thread that was perfectly aseptic, and would have no fear of sepsis from it, provided it was kept thoroughly aseptic afterwards by a proper dressing.

There are one or two little points which I wish to touch upon, because I consider proper attention to them as contributing to our success in this work. The first is the use of gauze for a dressing for the abdominal wound. I do not use iodoform gauze, for I have found that the odor of it increases the nausea of the patient after the operation. The

patient is prone to nausea any way, and to the majority of people the odor of iodoform is exceedingly disagreeable. I have found by experience that it does increase nausea after operation, therefore I use bichloride gauze, and sprinkle iodoform beneath it.

In regard to the management of the bowels after the operation, there is one valuable point which I have learned which is not commonly known by the profession. I might say that it came to me accidentally. I have found that when there is distention of the abdomen with gas or difficulty of securing an evacuation by the usual remedies, or when there is nausea which prevents the giving of remedies, the easiest, most efficient and most satisfactory way of securing an action of the bowels and of getting rid of the gas which has accumulated within them is to give an enema of a tablespoonful of powdered alum in a quart of hot water. I have never known this to fail in its action. I rely upon it after all abdominal operations, and the more I do, the more I use it. It is preferable to Epsom salts, in that it does not tax the stomach and does its work more thoroughly. It is applicable not only to abdominal operations, but it is exceedingly valuable in any case where it is desirable to get rid of gas in the bowels. It is a method of treatment which I have not seen described anywhere, and as I have previously said, it came to me accidentally. As I have found it of great value, I feel justified in enlarging upon the subject.

In regard to the use of opium after abdominal operations, the greatest difficulty which I have had to contend with is inaction of the bowels. Opium increases this inaction, and I have given up using it entirely in this class of practice. I never give opium after abdominal operations in any form. It is true that patients suffer, but I have in the majority of cases been able to control their sufferings by one or other of

two measures: I give antikamnia by the mouth, or resort to injections of alum water. In the majority of cases the pain is due to distention of the abdomen with gas, and if that gas is removed the pain disappears.

In regard to the bladder, it is generally directed in abdominal surgery that this organ should be emptied just before an operation. I have found that I can operate and avoid the bladder when it contains a certain amount of fluid, better than when it is empty. I do not consider the danger of wounding it as great under these circumstances as if it is entirely relaxed, soft and flabby. Unless we are exceedingly careful, we are apt to mistake it for something else and cut into it if it is empty. It has been my misfortune to open the bladder twice accidentally, but in both cases no serious results followed. The patients recovered as promptly as any I ever operated upon.

Dr. W. W. Stewart, of Columbus: There is one point in the treatment of the stump after the removal of the tubes and ovaries which I think very often is the cause of septic peritonitis. We find in a patient who is suffering from endometritis that the lining membrane of the tubes are affected as well as the uterus, consequently we are liable to have material in the stumps and the tubes which will infect the peritoneal cavity. I have seen several cases of oöphorectomy in which the tubes were seemingly perfectly healthy, but subsequent experience showed that they contained a small quantity of pus, and the use of carbolic acid or nitrate of silver in solution to swab out the ends of the tubes and cleanse the parts with water and absorbent cotton will very often stop this avenue of infection.

Dr. R. R. Kime, of Atlanta: In the question of the preparation of patients for abdominal section, it seems to me that there is a happy medium not to run to any extreme. In operating on those cases I should feel I had been derelict in my duty if I had failed to remove the use-

less articles in the room that afterwards might infect my patient. I would hesitate to operate upon a case of abdominal section in a hovel where previously there had been diseased conditions and I knew patients had suffered with diseases in that room that were likely to infect my patient. It may be true that a man may operate a dozen or twenty times—even thirty times in a room of that character without his patient becoming infected, especially if he has that class of patients in which he can close the abdominal incision after he has operated and he has been extremely cautious in his operation in not allowing any of his instruments, dressings, or anything of that character to come in contact with anything in the room. After an abdominal section has been performed in which drainage is demanded, in such hovels if the preparations have not been thorough, the wound may become infected. It may be possible for the curtains in the rooms to be laden with germs, and if the necessary precautions are not taken the patient may become infected. These are things we should not forget. "Cleanliness is next to Godliness," and certainly we should not be derelict in our duty to use a little precaution in the preparation of the room as well as the preparation of ourselves, instruments, etc. By an ounce of prevention one life in fifty may be saved. As to the details enumerated by the author in the paper I do not think they are all essential, but I do think all useless articles of furniture in room should be removed, room dusted and cleaned; if a hovel very uncleanly, the room should be whitewashed, and the floor, windows and doors be scrubbed with mercuric chloride solution. If a case is operated upon in a room of this character without preparation and drainage is necessary, the wound may become infected by dressings coming in contact with septic material in room, or while dressing tube a puff of wind may carry septic material into wound from curtains, blinds, pictures, etc., hence the ne-

cessity for scrubbing, whitewashing and dusting in unclean rooms.

As far as the use of ligatures is concerned, I certainly think there is a difference in a great many instances in regard to the ligature that is used in the wound. I cannot comprehend why it is unreasonable to suppose that a ligature of silkworm gut is not less likely to produce infection of the wound than sutures of an absorbing character. It may be possible in the preparation of the patient that the abdomen has not been thoroughly disinfected, or that in the dressing the disinfection has not been properly carried out, and if you place absorbent suture material in the wound it may absorb germs and make a focus of infection. On the other hand, if you use silkworm gut it does not have that power of absorption, and there will be less disturbance following it than any other suture that has the power of absorption.

I do not use opium in cases of abdominal section. Evacuation of the bowels is our sheet anchor in these cases, and it will do greater good than any form of opium. I have never regretted moving the bowels too early after abdominal section. We will get better effects and more good from the early use of catharsis than any form of opiates.

Dr. K. P. Moore, of Macon: I have been very much interested in the valuable paper of Dr. Holmes. Also in the remarks that have been made by Drs. Hardon and Kime. The suggestion of Dr. Hardon as to the alum enemata is to me entirely new and I am thankful to get it. The paper of Dr. Holmes has so well covered the ground as to the technique of the operation that there is but little or nothing left to say. One point in my operations I would like to mention, and while it may be of no very great value, yet it has served me a good purpose and I shall stick to it. In closing the wound after an operation I have always first brought the peritoneal membrane together by

the uninterrupted catgut suture, and in taking my deep sutures, I pass them through this roll of peritoneal membrane included in the catgut sutures; in this way my sutures which go through the skin and deep tissues do not enter the peritoneal cavity at all. The advantages of this plan are twofold; first it absolutely insures perfect coaptation of the peritoneal membrane, which might not be perfectly secured did my deep stitches go through all of the tissues including the peritoneal membrane at the same time; and thus securing immediate union of the peritoneal surfaces more effectually bar out the probability of infecting the abdominal cavity. Secondly, when the stitches are removed no part of them will have to be drawn through the abdominal cavity and carry any extraneous matter into the cavity. While this may seem of minor importance, and may be largely theoretical, yet in the twenty-two operations which I have done the only death which I have had was in a case where I did not pursue this plan.

As to the use of opiates after this operation, while I believe they should be resorted to just as little as possible, and used only as an extreme measure, yet in this instance, as in all others, there seems to me to be a happy medium between two extremes. Where the patient suffers very greatly, and moans and tosses for hours and hours, the risk of nervous exhaustion rather overbalances the evil of a small dose of morphine. Of the two evils, I have felt that some little opiate was the least. My habit has been, after waiting several hours and my patient seeming to become exhausted, to give a hypodermic of one-half grain phosphate codeia, and have always found it to bring most happy results. Usually one dose suffices. The codeia has seemed to me to have less objectionable effects than any other preparation of opium.

Dr. R. P. Cox, of Rome: There are one or two points that I desire to call attention to. I have done very little abdominal work myself, but I have had opportunities of seeing a great deal of it done both in the North and South. The best results in abdominal surgery I have seen were not in the hospitals of the North, where they have every appliance to carry out the extreme technique of Lister and Gerster and those who use those measures such as Dr. Holmes mentioned. I have seen a great deal of abdominal work done in hovels among whites and blacks. The best results I have seen have followed antisepsis and asepsis carried to a reasonable degree, and not to the extreme degree that is advocated by some and that I believe is obligatory in the older general hospitals, whose very atmosphere is impregnated by the germs of suppuration, erysipelas and gangrene. The instruments and sponges were thoroughly cleaned, boiled or washed in a 1-1000 bichloride solution. A bichloride solution was also used to cleanse the field of operation, etc.

There is one point in connection with abdominal work that I think ought to be borne in mind, that is location. In the medical and surgical history of the late war it is said that results in surgical work were better in the mountainous regions of Tennessee, North Carolina and Georgia than in other parts of the country, for the reason they had purer and more invigorating air. There is a great deal in that, and I believe we can get the best results in those districts without carrying out the extreme measures that are necessary in most general hospitals, for the reason that we have there a kind of natural asepsis more reliable than that which must be procured by artificial means.

I have heard several speak of aseptic operations; that in the hospitals where they have every appliance, the necessary skill and assistance, it is easy to do these operations. Now, if I wanted to do an aseptic operation, I would not

choose one of these hospitals, for the simple reasons that they have often to treat there the microbic accidents of wounds, that these institutions are usually situated in old and thickly populated communities, which are conditions unfavorable to asepsis. In such institutions I have seen the worst forms of septicæmia in abdominal work follow after the most scrupulous attention to aseptic details. In the favored district mentioned speedy primary union following abdominal operations is the rule. Septicæmia is rare, and that usually of the lighter and more easily managed forms.

Dr. J. G. Hopkins, of Thomasville: Just one word of comment on Dr. Moore's remarks. I think his early procedure unnecessary. The deep sutures, if properly put in the wound, bring together the peritoneum in such a way that that part of the suture which at first is in the abdomen is entirely concealed by the approximation of the edges of the peritoneum. Union takes place between the opposing surfaces quickly in the peritoneum. When his deep suture is withdrawn, it is not withdrawn through the cavity of the abdomen; it is drawn through a continuous tract from one external opening in the abdomen clear through the other.

Dr. Holmes, in closing the discussion: My paper was so lengthy that I did not care to take the time of the Association by giving more in detail my reasons for the care bestowed upon the preparation of the room. Dr. Kime has, however, expressed my views as to the necessity for it, though he doesn't insist upon carrying the cleansing detail to the extent that I have advocated. He also gives very clearly and forcibly the reasons why the silk worm gut is to be preferred as a suture. I am glad that Dr. Moore's views in regard to opium accord so thoroughly with my own. So far as antikamnia, as advised by Dr. Hardon, is concerned, I have used but very little, as I must confess

I am somewhat afraid of the coal tar preparations, and particularly with a class of patients whose nervous systems are broken down, perhaps from long continued suffering and certainly greatly depressed from ether, operative measures, etc., etc. I am certainly greatly indebted to Dr. Hardon for the suggestion of alum as a cathartic after abdominal operations. I will certainly give it a trial.

FEVERS.

BY S. B. POLAND, M. D., GRISWOLDVILLE, GA.

Fever has always been the chief object of medical observation and research.

It was considered nearly always as the most essential symptom of any sickness, and many fevers were even held to be the essence or *corpus totem* of sickness; probably not until recently has it been looked upon in every case merely as a symptom of a sickness, so that we hear no more of an essential fever.

It is certainly not easy to give a satisfactory definition of fever. In truth, I must confess that the theory that makes the entire fever process dependent upon the operation of certain nerve centers does not satisfy me, despite the convincing experiments on animals, and despite the influence of certain gunshot wounds of the head upon the animal temperature.

The post mortem elevation of temperature so frequently observed, proves that it is not a question merely of the operation of heat centers, but one of the local production of heat in the tissues themselves, as the result of chemical combustion; for after death has not only all nervous influences ceased, but also all circulation, and the perceptible local elevation of temperature can have its cause only in the local generation of heat.

The gradation of temperature, especially the production of heat, even in health, is certainly not delegated to the body by special heat centers.

The generation of heat manifests itself in the entire body,

in all the tissues and preferably in the muscular tissues, although it must be confessed that nervous influences, operating through special centers, are capable of enhancing the temperature. But even as the puncture is capable of producing a temporary but not permanent diabetes mellitus, so can the influence of certain nerve centers cause a fugitive rise of temperature, and without engendering a permanent or contagious fever.

II.

As to the fever, we must view it probably, as an acute alteration and acceleration of the exchange of organic material, with increase of tissue combustion, together with heat production and bodily consumption.

In some fevers more heat is also retained, but the augmented form of the same, the greater consumption of acid material, the increased combustion, are, at any rate, the role of the febrile process. Even the higher heat regulation in fever is apparently not delegated to single hypothetical nerve centers. It is apparently regulated and contained by the entire body and nervous system, together with the vaso-motor nerves and the peripheral circulating apparatus. But the body continually supplies more material, and it is the more rapid consumption and increased combustion of this that constitutes the material source of the production of a higher temperature in the fevered patient.

Clinically it is probably doubtful whether all fevers demand the combustible material of the body in the same way and in equal quantities. It appears that, in certain fevers, certain particular tissues, and in other fevers certain other tissues are attacked and consumed, which is due doubtless to the character of the infecting microbe. Only upon this hypothesis can it be explained that the effects of the fever are so different in the different diseases.

Thus in malarial fever and in acute articular rheumatism the red blood corpuscles perish in great quantity, as a result of which a convalescent from these diseases is very anæmic. Thus in typhoid fever the muscular system suffers mostly, and in a less degree the nervous, on account of which the patient becomes extraordinarily weak and thin, and the separation of the detritus, and consequently also the decline in weight of body, continues through the first week of convalescence and often actually increases in proportionate ratio.

In tuberculosis all the tissues and organs generally suffer, and the entire body shrivels equally; even the heart and the blood vessels become narrower; the nervous system alone frequently maintains its equilibrium and appears in some instances not to be at all involved by the hectic fever. The patient often preserves all his nervous energy, continues to diligently work, lays plans for the future, is up and about to the last day, and dies frequently while traveling.

There are also fevers where the body suffers more from an insignificant temperature than others with higher temperatures. Finally, there are also fevers which, without any perceptible localization in any organ of the body (except the enlargement of the spleen), and with remissions and occasional intermissions, with a light and occasionally with a higher temperature, linger for weeks and even months, without proportionately attacking the system generally, since the bodily weight does not decline any more than naturally results from a rigid diet. Fevers in which the organic albumin must for the most part be spared, and the albumin of the circulatory system only chiefly consumed.

But all fevers have one quality in common, *i. e.*, in all, more or less bodily tissues are attacked and consumed. And, since the indication to suppress this bodily consump-

tion is certainly highly rational, so it seems the chief task of the physician to lower the fever, the next cause of the increased consumption, and if possible, to suppress it.

III.

We may endeavor to accomplish this object in two ways: by the abstraction of heat and diminishing the formation of heat. To abstract heat is not fighting the fever, diminishing the bodily consumption nor preserving the tissues. It is simply a cooling of the periphery and an increased radiation. It is a more or less symptomatic treatment, which, of a truth, accomplishes nothing against the fever or the increased combustion at the expense of the system.

Accordingly it was thought the goal would be reached if we could succeed in discovering or inventing a remedy or remedies which had the power to destroy the fever process, lessen the augmented formation of heat and diminish the feverish consumption of material.

The sign had been given in quinine, the remedy against the fevers of so many lands, the antipyretic.

But the customary doses of quinine do not succeed against all fevers. Sufficiently powerful against the majority of fevers, it was powerless against many, *e. g.*, those which accompany polyarthritis, pneumonia and typhoid fever.

It was customary to give large doses of quinine, and, inasmuch as it is possible to control the pernicious periodical fevers, so it was considered perhaps possible to succeed in suppressing the other fevers of obstinate character.

So large doses of quinine were employed in the infectious and inflammatory affections, and even recommended for septic fevers. But even if it were successful in this manner to lower the temperature of the patient before cinchonism intervened to a great extent, it was noticed that these large doses of quinine not infrequently failed to ease the patient, and did not at all favorably influence the

course of the disease; in reality they only diminished the increase of heat by lowering the vegetative activity of the organism.

Even digitalis, the cardiac sedative, came into repute and was employed as a febrifuge. Rapidity of the pulse is one of the most distinguishing symptoms of fever, and when the doses usually employed in cases of heart trouble failed to accomplish any result in the fever patient, it was found possible, however, by means of large doses, not only to diminish the frequency of the pulse, but also to lower the temperature. But these even, despite their symptomatic effect, do not benefit the patient, because they lessen the combustion of the body only by poisoning the organism in a greater or less degree, and consequently depressing its vegetative activity.

It became necessary to find better febrifuges, and in turn salicylic acid, carbolic acid, thallin, antipyrine, phenacetine, etc., were employed. By means of all these agents it was possible to suppress the temperature and the pulse of the fever patient, thus removing the most important symptoms of the fever.

IV.

It is by no means so easy to say in what manner these antipyretics actually operate; it seems even impossible to follow their operation in detail. According to one they diminish the production of heat; according to another they increase the radiation; according to still another they impair the fever ferment, and finally they are said to lower the regulation of heat in the fever patient. Now we can only hope for an impairment of the fever ferment from remedies that operate specifically against the living excitant of the disease, as quinine against malaria, carbolic acid against wounds, etc. The remaining antipyretics, however, are not disinfectants. The lowering of the heat regu-

lation in a fever patient by means of the remedies is a laudable idea, but however, evidently a simple hypothesis not to be relied upon explicitly.

The increased radiation, on the contrary, is certainly effected by them, as the capillaries of the skin dilate and a greater or less degree of perspiration is established.

But aside from the increase of radiation, the diminution of heat generation must assuredly be taken into consideration, a fact which is indisputable in those cases where a somewhat larger dose, or when during a spontaneous defervescence a normal dose is exhibited, a collapse results. It is also not to be excluded in cases of ordinary fever, when the temperature is lowered by means of antipyretics, because if an antipyretic diminishes the formation of heat by lowering the vegetative activity, it does not necessarily follow that it should induce a weakness of the pulse and a diminution of the arterial tension.

The antipyretics thus militate against the most important fever symptom, the elevation of temperature, partly by increasing radiation and partly by diminishing the production of heat.

V.

Operating in this manner, are they beneficial to the patient? Can they not, must they not also injure him? These are the questions which at present the reflecting physician must lay before himself, and which cannot be answered without simultaneous reflection upon other questions that are connected with the fever itself, and these are they: What is really fever in a patient? What relation does it bear to the same? Does the fever constitute the chief danger to the sick? Can there be any universal remedy for the fever process as such when diseases accompanied by fever and their causes are so varied among each other? And how comes it that certain remedies in certain diseases

combat the fever with safety, and determine thereby the favorable issue of the case, while they are absolutely powerless against other kinds of fever, or at most only slightly beneficial; also, while other remedies perhaps reduce the fever but fail to influence the progress of the disease—in fact, often accomplish direct injury. To what can a rational antipyretic treatment be reduced and how far can it be carried?

VI.

Fever is an accompaniment or symptom of so many and varied diseases, dyspnœa and cough is of so many affections of the lungs, or dyspepsia and diarrhœa of so many affections of the alimentary canal. Fever and inflammation have the same import for the diseased organism.

A body does not sicken unless a material cause disturbs its vital activity in general, or some special organs, tissues or cell-groups.

At the present day we are enabled to say that such disturbing causes, at least in general, do not result from a cooling draught or an outpour of rain. All these evils, which, considering their influence on the organism, are nothing to a hot bath followed by an ice cold douche, owe their importance chiefly to the circumstance that the organism, finding itself already in the incubation stage of some acute disease, has acquired such a thermic hyperæsthesia of the skin that the least draught, the least abstraction of heat, even the nightly bath before bedtime, will immediately produce a shivering of the entire body and often an outright chill, due to the reflex peripheral vaso-motor tension, with which the fever process is ushered in and the eventually incubated catarrh or rheumatism succeeds in breaking out.

How often has the same individual been exposed to much greater colds, without experiencing harm, because he

was not at that time disposed to fever; in other words, did not have in his system in process of incubation the inciting material for sickness, the true cause of catarrh, rheumatism, pleurisy, etc., while at this time the resisting capacity of the body, weakened by the invasion of the living disease germs, needed only a slight impetus, a mere innocent breeze, in order to afford opportunity to the disease to break out, and to announce the same by a chill, thus giving the signal of reaction against the invading enemy.

Sickness is for us but the expression of a necessary fight of the organism against the exciters of the disease, which in most instances is a pathological micro-organism, less often a chemical poison or traumatic influence.

Inflammation is the local reaction of the invaded tissues against the disease exciters, operating upon that locality. Fever is the general reaction of the entire system against the alterations inaugurated by the disease exciters, in the general tissue metamorphosis and in the blood crasia.

This reaction is a condition of recovery. Without reaction, *i. e.*, without inflammation and without fever, the body would be obliged to succumb without mercy to the inimical influences, which really occur in cases of highly intensive septic infection, or hemorrhagic smallpox, and also of peracute infections, in which the too severe and too rapid poisoning of the blood renders all reaction impossible by impairment of the vital activity and leads directly to collapse. Without reaction on the part of the organism invaded against the invader, the living disease exciter would induce such alterations in the bodily tissues and disturb the blood in its crasia to such an extent that the continuation of life, to say nothing of recovery, would become incompatible. The *vis medicatrix naturæ*, each spontaneous recovery, the self-limitation of pneumonia, of typhus, influenza and dengue, depends upon this reaction of the macro-organism against the invading and inimical micro-organ-

ism. It is a fight for existence between both, and when the microbe is victorious the death sentence of the patient is sealed. When the *vis medicatrix naturæ* conquers, the microbe is rendered harmless, sometimes destroyed, and for the most part expelled from the system.

VII.

Fever is but an evidence of reaction, a measure of the intensity of the infection on the one hand, and of the reactionary capacity of the system on the other.

On account of a slight tendency or disposition on the part of the organism, the infection can only obtain a slight foothold, its intensity can even be lowered, and in both these instances the fever will remain slight, because the infection being slight, energetic reaction on the part of the system is unnecessary.

The infection, however, may attack the organism so severely that, being thus too easily crippled in its ability to react, it cannot respond with a strong fever; or again, when capable of energetic reaction it may respond with too strong a fever without gaining the ascendency over the disease exciters or combating their destructive influences. In the last two instances the patient is lost.

But between these two extremes there are other cases which constitute the great majority of cases where the patient reacts with a high fever and comes out victor from the fight.

The attentive physician can generally ascertain from the complexity of the symptoms manifested by any case, whether a slight fever is the expression of a slight infection, or whether it is slight because the infection is too severe, the system's capacity for reaction impaired and consequently reactions too feeble. And too, in cases of very high febrile action a favorable issue may be hoped for.

It is not the fever, or at least not the fever alone that constitutes the severity or mildness of any disease. A patient with a high fever, but with muscular strength well preserved, good expression of countenance, skin with normal color, pulse regular and strong though it be frequent, is in a better condition than one who has a light fever, but in addition to that, weakness out of all proportion, an altered countenance, subicteric discoloration of the eyes and a weak pulse.

In the severe cases there is in addition something else besides the fever that conduces to the severity of the sickness that threatens impairment of the vegetative tissue-activity, and which as well in high as in mild, and often in periodical fevers, determine the death of the patient.

That is next to the nature of the cause of the fever, the quality and quantity of the living, infesting disease germs and the poisoning, which they generate or give off in the system attacked, that is, however, the insignificant or failing ratio of capacity for resistance of the infested organism.

VIII.

I do not mean to say that a very high, at times continued fever, does not have a severe prognostic importance.

It is certainly a manifestation of the necessity for an energetic reaction on the part of the system, and in this respect is a sign and measure of the severity of the infection against which the sickened organism must employ all its resources in order to defend itself and to react successfully, and on the other hand is it not sure that this energetic reaction will prove sufficient to master the infection; and on the other hand a long continued reaction and the necessary combustion of material can transcend the measure of capacity for resistance in the patient, and lead to an exhaustion of this reactionary ability.

The favorable influence of the ~~fever-process~~ upon the effect of the infection can be manifest in various ways.

1. It can injure the vital activity, the multiplication and perhaps, also, the virulence of the living disease germs in the body through an elevated temperature of the blood and tissues, which is sufficient, as direct destruction is not necessary and for the most of the microbes is impossible.

2. It can increase the capacity for resistance of the tissue elements in their phagocytic relations.

3. It can render the nutrient plasma in the tissue unfavorable to the living disease germs through a modification of the feverish exchange of material, in fact, sterilize it to a greater or less extent.

IX.

As far as the influence of temperature is concerned it is a certain fact that many of the pathogenic germs, as those of tuberculosis, endure the ordinary temperature in fever very well or actually thrive in them, while certain others certainly suffer and partly succumb to such a temperature as the streptococcus of erysipelas, etc.

Facial erysipelas at a temperature over 40° C. heals more surely and more rapidly than wandering erysipelas, which lasts often for months with a slight temperature.

X.

The increased formation of heat can in the case of certain microbes increase the phagocytic activity of the tissue elements, and thus the capacity of the tissue for resistance. I will not consider the phagocytic theory as indisputable, much less as established. But when we take into consideration the fact of the invasion of the system by such small, but countless cellular enemies, and when we remember that the system must overpower them or succumb, then we are obliged to admit that it could oppose to such enemies

nothing better than its own cellular elements. It is certainly not necessary, even probable, that the entire battle between these inimical invaders and the physiological cells should be waged by the white blood corpuscles alone. Why should not other tissue elements, pituitous cells, lung cells, etc., take part therein?

Why should there be specific destructive cells, as in a miliary organization?

The whole teachings of the phagocytic theory have not yet been substantiated, but they are so natural from a scientific and physical standpoint, so self-evident, so conspicuous that if they were not already discovered, one would be obliged to discover them. And the objections that have been urged against them are not at all tenable.

That contagious patients, even if convalescing, expunge with the contagious excretions, the disease producer alive, only shows that not all the bacteria are devoured, which is neither more nor less than the destructive cell theory would lead us to expect. The function of excretions, however it is accomplished, is itself one of the means nature uses, outside of fever and inflammation, to free herself of the invading enemy; it is, as long as either work is accomplished by the secretions in the intestinal canals, surely also a defensive operation against the enemy set in motion by the cells, (*Koerpersellen*), although this enemy is not destroyed, or may even, along with the destroying cell, be cast out alive.

Baumgarten's searching experiments offer not sufficient proof against the verity of phagocytism.

The large cells (*Riesenzellen*) in tuberculosis, holding imprisoned the tubercle bacilli, their presence in syphilis, even if found in fusion of several destroying cells, and the statement of myself and others, of a possible spontaneous healing of tuberculosis, not only of the bone and glands (*D'dusen*) but of the lungs also, speak for the destroying or

destructive cell theory; in spite of all scruples to the contrary.

It must not be supposed that the body comes off victorious in every case; it is not safe to apply the theory of destructive cells to all infections, nor on the other hand, to reduce to narrow limits, the manner in which the cells of the body defend themselves against the advances of the enemy. It is not necessary that all of the microbes be annihilated by the destructive cells—indeed, considering their numbers, this is impossible—it is even quite reasonable that certain microbes destroy those cells which they invade, especially the blood cells. It may be supposed that the change in the chemical activities of the affected cell elements, prompted by the process of fever, may be sufficient to lessen the life energies of inimical microbes.

XI.

The fever emanating from the alteration in the changes of the ordinary bodily tissues, can by these means create such a change in the feeding ground, so to speak, of numerous microbes, as to lessen their virulence; check their farther increase in the body; make them biologically sterile, as well as to check, chemically, any deleterious effect which their decay might occasion.

It can well be assumed that in the feverish change of body tissues, leucomaines are produced, which independently of the possible microbicide effect of certain ptomaines, can lessen the vegetative activity of the microbes. The complete turning over, as it were, of the feeding ground, coupled with the heat of the fever, are not to be underrated as remedial agents working to heal in the service of fever. Just as in fever, also, the formation of acids in the muscles and other tissues is increased.

XII.

While the fever causes general reaction of the whole system, so inflammation causes a local reaction against a local infection,—the cause of the inflammation—or against a localization of a general infection. The inflamed tissue shows a moving of leucocytes (leucocyten) which have the power to act a phagocytic part; its temperature is higher than prevails in other portions of the fever infected system. Here we also behold the formation of abnormal products of exchange-material, and chemical alterations of tissues, which very likely sterilize the nutrient grounds; proceeding here plainer and surer than at other points. The defence of the system against the disease-producers is here locally given to the same remedial agents, as when the whole system is under fever, and it appears, therefore, but reasonable to suppose that the inflammation carries with it the same value of reaction as does fever. Indeed, the inflammation does more; causing, through the action of the cells upon the intestinal canals, a partial expulsion of the countless bacteria, or placing by means of swift enterlacing and weaving of tissues such a check or dam in their way as makes their further progress extremely difficult.

XIII.

The fever like the inflammation, can and will serve a useful purpose, provided the consumption of material is not carried up to the point of exhaustion. And that the fever does not really represent the highest or greatest danger of the disease is made clear by daily practical experience. It is the feverish, acute diseases which, as a general rule, are susceptible of healing; and as a note worthy fact, are capable of spontaneous healing while those chronic diseases that are clear of fever are either incurable or heal with great difficulty; besides this, diseases free of fever and

which are more or less acute furnish a very great mortality. We will pass over chronic articular and medullary (Gelenk und Rückenmarks-entzündungen) inflammation. Experience satisfies us that cholera, which runs its course without producing fever, and the feverless beriberi are specimens of acute and chronic infections, and so often fatally, while typhus, pneumonia and intermittent show up much happier results. And even the plague, according to reports of watchful attendants, would often terminate abortive in cases when a high fever accompanied the malady. And what physician of practice has not made the experience in cases of typhus, that after convalescence, the more severe and higher the fever was, the better prepared did it leave the patient to withstand the attacks of other infections, as if the long and continued high fever had cleansed and purified the typhus patient.

And what shall we think of the many fevers, lasting only a day or two, whose causes generally remain hidden from us, passing on and leaving not a vestige of sickness in their wake.

We have here, rarely, infections from without, from canals and other mucous membranes, for without cause there can be no effect. Here the system very speedily vanquished the agent which caused the disease; made it impossible for it to establish itself and multiply. Had the system failed in this struggle, who can tell what disease this ephemeral fever might lead to.

The great number of abortive ending cases, pointing directly to the power and success of reaction, should surely teach the practicing physician a lesson. How many abortive cases of typhus are there not in all centers of typhus, which are not generally diagnosticated as a conatus of typhus infections, because the physician, not seeing any clearly defined symptom of typhus, is satisfied to diagnose the case as due to rheumatic, catarrhal, gastric or mem-

branous fever; and will declare this to the laity, because he will not admit and dare not admit that he has failed to understand the true process of the disease; the more so since the case terminated so favorably without his having a hand in it. How many apparently simple cases of catarrh of the nose, the eyes, and of the bronchioles, in an epidemic of measles, turn out abortive measles and scatter, through the physician's recommendation of a change of air, the measle epidemic in a place hitherto free of the disease, upon an island? And what could be said of many of the buccal hyperæmias with little fever, during an epidemic of diphtheria or scarlet fever, often with the damaging albumin in the urine; what could be said of cases of simple stomatitis during an epidemic of smallpox?

And what conclusions can be drawn with regard to the difficulty or impossibility of checking the spread of certain diseases of an infectious character, which are often scattered far and near by means of railroads, because their character is not understood?

In these abortive cases of infection the ephemeral fever is often the only sign of alarm that the system has been attacked. It ends harmlessly, because in the struggle for existence, the system soon attains the upper hand. But there can be no doubt that it obtained the victory only by prompt and energetic reaction.

XIV.

It is therefore, not a desirable object, to check the fever or annihilate it altogether. One might discuss the point, whether, fever was the result of a local reaction of certain nerve centers or a general reaction of all or most of the tissue elements of the system: but, as a reactive function against the disease producers, fever is to a certain degree beneficial, useful, that is after the inimical microbe has be-

come established in the system. It might be desirable to seek an agent capable of destroying the germ of the disease, the disease producer, the cause of fever, or at least make their presence harmless to the body.

This is indeed the result of quinine given in malarial fevers, of quicksilver in syphilitic fever. But these agents are, strictly speaking, not fever remedies; they are of no effect when applied to other fevers; and even in malarial infection and syphilis, where they lift the fever, subdue it entirely, or at least greatly reduce it, is this due to the fact that they are fever remedies; that they reduce the temperature of the system and bring the feverish exchange of material to a normal condition? No, but because they remove the specific cause of the specific fever.

As a matter of fact quinine not only combats intermittent fever and those erratic ones derived from malarial infection, but it reduces the malarial tumor of the spleen that exists without fever and masters the feverless marsh cachexiæ.

Quinine acts against malarial fever in the same manner that Lister's antiseptic method does in wound fever, and in septic pyæmie; like carbolic acid, and sublimate applied to the surface of the septic wound, and introduced in the affected canal of the system (Koeraper canal); like the diligent antiseptic irrigations of the vagina (Scheide) before, and of the womb after, birth will prevent the occurrence of puerperal fever. This is causal therapy of fevers and not fever-therapy; it is not subjugation of the fever process.

XV.

But not all the antipyretics or better said anti-thermic agents which substitute quinine, act in this manner. They ought to, as general fever remedies, far surpass quinine. Kairine, thallin, antipyrin, and phenacetine have no specific influence upon the cause of the fever, the prime object of

removal. They lower the fever, first by increased radiation, and next by diminishing the production of heat.

In this their course is baleful only; for while they interrupt the course of the fever, they remove not the cause of it, and while their influence lasts, annihilate or at least lessen the power of the organism to ward off and defend itself against the attacks of the fever producer. These remedies can lessen the heat and thereby reduce the feverish exchange of material; they can, while lessening the combustion in the system even lessen the increased separation of the urinary constituents (Harnstaff), but with all these possibilities they will not benefit the patient. Even in such cases where the disease producers flourish under the highest fever temperature and maintain their footing against all phagocytic attempts to dislodge them, even there is still left the hope so well grounded, that the change of material, altered by the fever, as well as the altered feverish nutritients, will put a period to these pathogenetic microbes. But while the beneficial results of the reaction of the fever upon the infected system can hardly be overestimated, they are, on the other hand, totally lost by the treatment with the powerful antipyretics and antithermics.

One cannot entertain a rational hope that, through artificial lessening of the radiation of heat, we can bring the feverish process of the disease to a termination. A lessening of the production of heat, is not possible without a lessening also of the vital activity of the organism, and a lessening of its power of resistance and defence. But this is poisoning. The degree of poisoning, by means of which the antithermisis lessen the production of heat, it is true, is only a relatively small one, as it does not affect the vital nerve centers; yet it is nevertheless a degree of poisoning.

And when the patient happens to be of a very sensitive nature; when the doses given are very large; when even,

at the beginning of a defervescence only medium doses, as in pneumonia, are given, we can witness dangerous collapses. I have seen them. In these cases the poisoning only affects the activity for the production of heat.

XVI.

It is evident that fever can only be combated with advantage by means which strike at not the consequences of fever, the increased production of heat, but at the cause of the fever, the fever producer itself, similar to the effects of quinine in malarial fever. But when we consider that various pathogenic microbes underlie various infections, and that the various pathogenic microbes are very differently affected by the contact of antimicrobic and antiseptic agents, it is clear that for the present we have no agent, nor can we find one, which is a universal remedy against all infections and thereby against all fevers, and yet produce no ill consequence to the patient. There are disinfectants, sovereign poisons for all living animals and plants, remedies which can kill the bacteria; such agents as the sublimate, carbolic acid and others, but the quantity in which they have to be taken to kill the resident microbes in the organism would sooner kill the patient than them.

The end to be consummated is the possession of remedies, such as quinine against malaria or quicksilver against syphilis, which, being given in sufficient quantity to either kill the specific producers of sickness or neutralize their ravages, yet cause no danger to the patient. To seek specifics against the various infections remains the problem of science, and their discovery can be by a lucky chance. After these are found, fever of all infections will be rationally treated and conquered. This will not be called annihilating the fever process, but making the fever unnecessary, and sparing or saving the organism its feverish reac-

tion, while the cause of disease, the producer of fever itself, is made harmless.

It is not at all impossible that among those antipyretics already discovered or invented, or among those still to be invented or discovered, one or another may prove a specific against certain special infections and their fevers. But we may expect that the various kinds of disease producers will also have very many kinds of specific remedies. A universal antipyreticum that will not hurt the patient and make all the fever producers alike harmless is destined to remain, for the present at least, a pious wish.

XVII.

It is a different problem when the question is asked, whether a high fever is in all cases absolutely healing in its tendency; whether it cannot, under certain conditions, become hurtful instead of helpful, and whether the storing up of heat in the body cannot prove the source of eventual danger?

We must admit that the stored-up, excessive temperature can overtax the powers of the heart, and threaten the nerve centers, and to meet this danger it might be necessary to lessen the excessive heat in the system. This object can be accomplished in a theoretical manner by drawing heat without diminishing its production, merely by cooling the heated body, without giving up or lessening the continued building by reaction.

For these purposes the various hydropathic methods serve in good stead. Such, for instances, as cold baths, wrapping in cold sheets, cold shower baths, also the lukewarm or not quite fresh baths or those cooled off gradually, drinking great quantities of ice cold water, or conveying them, by means of the enteroclysm, high up into the alimentary canal.

It is clear that all these procedures draw from the body vast quantities of heat by imparting them to the cold water, while the production of internal heat is not only not lessened, but really increased. When we consider (what is easily seen by everybody) that the temperature of the armpit is not lessened while the process of drawing heat from the body is going on, and the periphery throwing off very large volumes of heat (according to Liebermeister, healthy bodies give off seven times as much heat as under ordinary clothing), we must conclude that these modes of drawing heat from the body must increase the production of heat to a very large degree.

XVIII.

From all these considerations we come to the conclusion that the drawing off of heat and the consequent cooling of the system favors only the surface of the body, and that the real production of heat is increased thereby.

This abstraction of the heat assists the fever. It is true they partly cool off, but, taken all in all, they increase the combustion as well as the quantity of material, which has already been increased by the fever.

Employed for the purpose of reducing heat, we would be obliged to condemn these practices theoretically, but in practice we would recommend them, and that on account of their beneficial influences upon the course of the disease.

And here we ask ourselves the question: Are these draughts upon the warmth of the body really beneficial only because they cool off, or are they useful because they increase the production of heat, of combustion by the system, and use of the material, which has already been heightened by the fever? Is it because they increase the effects of the fever? Is it not probable that the forced combustion produces still greater alteration of the change

of material in the tissues which heighten the opposition of the fever to the living disease producers? Is it not a consequent livelier exodus of much excremental stuff, as ptomaine and leucomaine, which decreases the chemical poisoning of the blood mixture (Blutmischung) and the tissue (Gewebskrase)? Is the thing that helps to be found in the increased combustion of the body tissues and the blood, which was made possible by drawing off the heat? It is owing to certain fixed heat regulations that protect the body from the consequence of an excessive storage of heat that will not raise the temperature of the system so as to endanger the heart and nerve centers. And when this is the case I pass by certain influences of cold upon the periphery as well as all reflex action and the expectorating influence of cold baths in pneumonia.

How different is the action of the process of drawing off heat by means of cold baths, cold enteroclysms and other means of like nature from the chemically acting antipyretics, which, though they partially increase the radiation of heat, yet, on the whole, diminish the production of heat, which often leads to collapse or algidity.

The cold plunge bath, when applied to enfeebled patients whose powers of reaction and pulsation are weak, is able, on account of the exhaustion of the production of heat, to bring about collapse. We behold here the utmost exertion of the body to substitute the drawn off heat by increased combustion, and through accelerated consumption, but the enfeebled patient lacks the strength to do this. It is the economical deficit through which the production of heat is exhausted.

With the antithermics on the one hand, it is the direct blighting influence upon the production of heat, the direct adverse interference in the chemical life process of the tissue, that leads to collapse. By the former the evanescent decrease of the production of heat which comes into

play. The former seeks to assist the body in its struggle for a reaction, the other suppresses the reaction against the fever producers.

XIX.

And when, after the light withdrawals of warmth have ceased, the temperature of the armpits is slightly lowered, and this sinking lasts only a few hours, we might very likely find the cause of this in the fact that during the withdrawal of light quantities of warmth, made necessary by the feverish equilibrium of heat, the slightly augmented production of heat ceases before the increased radiation of heat from the surface of the body ceases; and so, after the forced augmentation of heat ceases, more heat is lost than added, because the system has, in a manner, gotten used to increased radiation and continues to throw off more heat. Giving off heat under such circumstances is really a cooling off of the body, and that without lessening the reaction against the disease producer, without lessening the production of heat or drying up the source of the same.

We see then that even the cooling final effects of the light withdrawal of heat has nothing in common with the chemical antithermics, whose influence is prostrating to the reaction of fever.

The light sequestrations of heat, with cooling after-effects, are very easily produced by cold sponging, through cold sheets, through full or plunge baths, not too cold, through baths at first half lukewarm, but during the immersion of the patient made continuously fresher by the addition of cold water, by which means the giving off of heat and absorption of the same by the baths is not only compensated and the sequestration of heat to a certain degree not only preserved and lengthened out, but is, by degrees, augmented.

The effects of cooling baths are perhaps more completely

and surely obtained by the use of cold enteroclysms (enteroclyse), which has produced in all cases under my observation, and especially in abdominal typhus, a slow but steady lowering, lasting several hours, of the temperature of the armpits. Enteroclysis is greatly assisted in spotted typhus fever by drinking copious draughts of cold water. A daily use of five or six, and in a few cases of from ten to fourteen liter of cold water almost regularly obtained for me the defervescence while the exanthem was flourishing at its height.

XX.

It may be stated here, as a noteworthy fact, that there are some diseases, accompanied with high fevers which, by a diaphoretic method, run a successful course, and are evidently benefited by a course so contrary to the methods of drawing away portions of heat from the body.

I have no reference here to acute rheumatism in the joints (Gelenkrheumatismus), nor of certain acute catarrhs. In these causes the system, even without particular aid from the physician, and by natural and spontaneous healing, sweats easily and copiously. But I have reference to pneumonia, which gets along just as well, and in certain epidemics even better, with the warm applications, than with the cold water practice. But if a patient is brought to perspire freely, is not this also a method of drawing off heat from the body? Does not the sweating body radiate more from the periphery than it would if it were dry? Is not the forced perspiration also a compensating method, to lessen the accumulation of heat in the body? Aside from the increased expulsion of deleterious matter, there can be no doubt but that this perspiration method is but a form of abduction of heat, which does not increase the production of heat, or, at any rate, increases it less than does the cold water practice. But upon the whole, the

perspiration method is not successful in all kinds of fevers, and in many cases where it is a benefit, the benefit is certainly less than would result from the drawing off of heat by cold water. This is, perhaps, due to the fact that the sweating process does not heighten the production of heat, or, at any rate, does not raise it as high as the cold water process does. It simply only accelerates the expulsion of heat, which, by the warm condition of the patient, has been accumulating. This appears to be the main difference between the sweating process and the cold water method. Both of them rest upon the abduction of heat.

XXI.

If we take into consideration that the light abduction of heat affects the internal temperature but little, and does not raise the production of heat to any great degree, like the drawing off of large volumes of heat, we could come to the general conclusion that the slight abductions of heat are less healing than the large ones, and that it is not the cooling off of the periphery, but exactly the opposite, which is beneficial to the patient. It is the increased combustion in the system, and the consequences flowing from it, upon the general exchange material, and the influence upon the general feeding ground, that exercises such a beneficial influence. Paradoxical as this may appear, it is nevertheless true, if we take into consideration the experiences in the clinic, on the one hand, and on the other the greatly increased radiation of heat in the cold bath, in comparison with the preservation of the inner temperature which cannot maintain itself without a corresponding increase of the production of heat.

XXII.

The cardinal difference between the hydropathic abduction of heat and the lessening of heat by chemical antipy-

retics, lies, according to my conviction, just in this: the first augments the production of heat, the latter decrease it. That the first causes the source of the internal heat (thermogenesis) to flow freely, the latter to dry it up.

These two antipyretic methods are in direct opposition to each other, and we may say that impartial clinical observations will hold the one useful and the other the reverse.

XXIII.

From what has been said, we conclude that the fever is not the main danger in a disease; upon the contrary, the fever is, to a certain degree, a healing reactionary appearance of acute disease. There is, therefore, no cause to attempt to suppress the fever as such. If certain remedies combat almost surely certain fevers, and thereby enable the patient to get well, then we find the cause in this, that these remedies do not combat the fever as such, but the disease producer itself. It combats, as a specific, the cause of the fever of a certain infection, as a specific and a microbe remedy. General antipyretics, good in all kinds of fever, have not yet come into existence. There will hardly ever be an antipyretic that can strike the various causes of fever, which are caused by such variously acting disease producers, without injuring the patient himself. For this reason, we must content ourselves to lessen the augmentation of heat in the feverish system without reducing the production of heat—the reaction. We therefore recommend the hydropathic methods, and look with suspicion upon all the antipyretics as general remedies of fever.

XXIV.

Now, gentlemen, if I am not ready to recommend the treatment of diseases, accompanied by fever—which are probably all acute infections—by the customary use of the antipyretic and antithermic production of the chemical

laboratories and apothecaries; if I recommend and prefer in these diseases the patient waiting upon the equalizing process of the natural conditions of life in the infected organism; if I prefer this course in all those cases where we have no specific remedy against the disease producer, I do not want to be considered a therapeutic nihilist. Therapeutic nihilism has played out. It has proved an inestimable blessing so far as it succeeded, in a time of scientific perfection, to destroy the allusion of Allopathy and to explain the apparent wondrous results of Homeopathy. It has buried both of these systems, which were in direct opposition to all the teachings of natural sciences. We owe it to therapeutic nihilism, that Nature's great healing sources, the defensive and reactionary power of the organism, have been acknowledged.

To-day we are not any longer Allopathist, as we cannot be Homeopathist. At the same time, we are not any longer Nihilists. We are simply *Doctors of Nature;* physiological therapeutists raising high the etiologic aim to discover the cause of the disease—the disease producer itself—and when this is impossible, to forestall its results, following the old maxim of Hippocrates:

Quo natura vergit, eo tendere opportet! We study to-day the natural spontanious healing of diseases, and we will use knowledge thus gained as a finger-board in those cases where we cannot succeed to move the disease producer out of the way.

The nihilistic and much-esteemed school of Vienna assuredly went too far and threatened to overthrow the whole apothecary. This has brought on a reaction in the camp of convinced therapeutists, and this reaction was wished for—was necessary. But, unfortunately, it went too far, for, in union with the all-powerful practiced method, it has caused, at the present day, the search after remedies; has overestimated the value of therapeutic ex-

periments upon animals, as well as overestimated purely symptomatic consequences (Erfolge), and in this manner is resurrecting the ghost of the old allopathy. It is an allopathy without bloodletting, it is true, and also with less vesicants as heretofore, but still an allopathy, which, under its principles of treatment, looks more to the symptoms than to the cause of the disease, and pays no attention to the remedies which are at the disposal of the body attacked, and which the system uses to overcome its disease and to restore it to its wonted health.

As modern physicians (*naturaerzte*) it is our province to discover the methods or conditions of nature's spontaneous healing, so that we may not hinder with our procedures nature's efforts at healing, nor put in question the possibilities of healing. Only in this way can we come up to our first duty as conscientious physicians, never to harm; to help. The second duty will have to be fulfilled within the boundary of the estimation of all conditions.

Let us therefore abstain from the practice of annihilating the fever, as such, at any price; for it is in so many cases the best ally to the physician, but let our aim be to combat the fever in its causes, and thus spare the necessity of fever to the patient. The tendency to find a universal fever remedy; to combat the fever process as such without knowing its cause, is a lamentable step backwards in the practice of the rational therapy. We can only warn against the use of such remedies. It is an interesting fact that the conviction of the possible good offices of the fever is a very old one.

We would point the words of Boerhaave: *Quid est febris? Est naturæ irritate conamen ad expellendum stimulum inconsuetum;* and the words of Borsieris: *Quos interdum morbos remedia non curant, febris curat.*

TYPHOID FEVER.

BY N. M. DARDEN, M. D., NORWOOD, GA.

There are various grades and types, of whose ravages almost every community stands as appalling witness, therefore anything of real value concerning this fell destroyer of the human race will be received, doubtless, right gladly.

Typhoid fever is said to be specific in nature and usually very slow in its first approach. The patient sometimes for several weeks before giving up feels weak and out of sorts, so to speak, finally goes to bed and a physician is sent for. In most of such cases the disease is well established.

At other times the disease comes on quite suddenly and several days will elapse before you can diagnose it as typhoid, since about ten days intervene from commencement of attack before all the diagnostic symptoms present themselves.

I will treat first of plain, uncomplicated "Typhoid Fever." One of the leading symptoms in the beginning is great prostration, with almost constant tendency to diarrhœa; the usual symptoms of headache, pain in the back and limbs present in milder types of fever, accompany this in the outset.

Nervousness and difficulty in sleeping is prominent from first to decline of the disease. Petechiæ or purple spots appear on skin, also rose-colored lenticular elevations, sudamina or small watery vesicles on front of chest. These make their appearance near the tenth day or middle of second week. Then the tongue becomes dry and the gums, from then on, will be red and swollen and much disposed to bleed. At this stage, the bowels will be more or less tym-

panitic, and hemorrhage from them may be induced, either by straining at stool, sitting up too soon or other slight causes.

It is not uncommon in some cases for the hearing to become impaired, and sometimes altogether lost for a time. In these severe cases the parotid glands often enlarge and suppurate, adding greatly to the patient's trouble. I have now gone through with the most prominent symptoms observed in any of the various grades mentioned. Under, however, proper treatment, many of the severe symptoms given will never arise. That treatment I will now give. If rigid criticisms should be provoked in the impromptu discussions I will not be there to receive them. Imperfections may be discerned but solid facts will not bow down to a little jaw-work away from home. In medicine perfection will never be attained. I discard the idea taught in some of our standard medical works that typhoid fever is a self-limited disease, that it will run its course, and that medicines, aiding the powers of nature have no control in limiting its duration. It is often aborted in its forming stage and can be greatly checked at any stage. That it can be cut short as easily and quickly as our malarial fever no one of experience will pretend to claim, but, to say that its duration cannot be very materially shortened is a stigma on the profession.

Typhoid fever, if permitted to go on, very soon involves (more or less) all the mucous glands with which the alimentary canal is studded from the stomach, the entire way to rectum, constituting what is termed enteric fever.

Now it has been my observation that, with proper treatment from the start, the disease will rarely become local, or in other words more explicit, the glands of the bowels much involved. It usually comes on with high fever, with slight remissions towards early morning. If called to see a case in the outset and no medicines have

been given to move bowels it is important to give some mild cathartic, such as rhubarb and magnesia, castor oil or Epsom salts, after the action of which no more cathartic medicines will be needed. The object of this active medicine is to unload bowels of all fecal matter. The great object to be kept constantly in view in the treatment of typhoid fever as well as other diseases, is to control the fever, bring the pulse down to the normal standard and there keep it.

Give quinine to adults about twelve grains in three or four powders or capsules, commencing whenever the remissions occur, which is usually in the morning early. Give these quinine doses about three hours apart, also put the patient on veratrum and spirits nitre in the following proportions: three drops of the former to ten drops of the latter every three or four hours continuously through the day and night. If in twenty-four hours the pulse has not reduced any increase the veratrum and other drops, and so on, each day persevere, until you control the heart's action. After you get the pulse to normal then gradually reduce the doses until you reach the quantity necessary to keep the pulse to proper standard or within a safe boundary. Continue this line of treatment as long as there is any tendency to rise of pulse. Administer the quinine for at least five or six days. Nor should you fail all this time to use vigorously external means. You will always find tenderness on pressure over regions of stomach and lower bowels, especially over iliac region. Would apply spirits turpentine twice a day, followed with hot bran poultices, made up lightly. If these fail to relieve tenderness in a few days, apply fly blister over parts most tender and reapply until you give relief. During all this time the bowels must be kept motionless, after the first move in the outset of sickness.

This you can do by the use of opium. The patient must rest at night. This you can obtain by the use of morphine

and bromide potassa combined. ℞ One-fourth grain morphine and five grains bromide, to be repeated in five or six hours if necessary.

If you should not check fever in first few days there will be a tendency of the tongue to become dry about which time you should begin the internal use of turpentine.

℞. Five drops in gum arabic, yolk of egg or in capsules will answer nicely. Give the emulsion every four hours to be continued throughout the after treatment. The turpentine can be given in the veratrum and nitre recommended in the beginning. By so doing it will prevent the frequent repetition of medicines to which most of patients have an aversion. These fever drops are the safest and most reliable to control the fever. I mean to say in my hands I have been able in most instances to keep the circulation down to a more uniform degree by their employment than by any other agency for the febrile movement. Yet, owing to complications and idiosyncrasy of the subjects, I have resorted successfully to some of the new coal-tar series, in very moderate doses, closely watched. When skin is warm do not neglect cold sponging to face and hands and to keep on forehead a cold cloth, guarding diligently at the same time any undue dampness of bed and chilliness from exposure to draughts of air from any direction.

The use of some pure spirits will become needful when you begin the internal use of turpentine. Tablespoonful every four hours between the doses of the medicines, which will generally tone up the stomach to bear the original fever drops already mentioned or the coolness that may at any time be superinduced by other drugs advised.

The drying of tongue is evidence of exhaustion and indicates the use of whisky and turpentine, notwithstanding European doctors to the contrary. "Old ocean is wide

enough to keep us apart." We stand for prohibition for the well, but the sick require stimulation. Not as a moral economist, hence, I would plead that it is right to prescribe whisky, a genuine pure article, as one of the finest medical agents that can be instituted. When there is much exhaustion the rubbing of the entire surface night and morning with lard will be of great service, from beginning to convalescence. Whenever there is preternatural coldness in the extremities add or incorporate with the lard some kind of good spirits, thereby increasing peripheral circulation. The most rigid abstinence in the way of dieting should be observed, without which the best medical aid will not succeed, and with which, all things considered, it is a sorry M. D. that can't help wonderfully to cure typhoid fever, as much so as in any other disease known to humanity.

After much perplexity at first I have at last found good coffee with half sweet milk, with or without little sugar, is the most innocent and reliable article of nourishment. They (the patients) can have as much of this and as often as they desire. Soups, broths, meats, eggs, buttermilk—the use of which always say no to them. Positively no diet should be allowed that will cause the accumulation of fecal matter in the bowels, which would necessitate medicine for its removal, and hence, in this way increase intestinal irritation or inflammation of same. I would not object to egg in the shape of eggnog, or beef tea or chicken water, both of which to be prepared without any thickening with flour or corn meal; either can be seasoned with salt and pepper to suit the taste of patient.

As before stated, good coffee, good tea, and fresh sweet milk equal parts is the only pabulum needed. This diet is both food and medicine, being stimulating, nutritious and soothing to inflamed mucous membrane of alimentary

canal. If, in course of treatment, hemorrhage from bowels should occur, use a pill composed of one-half grain opium and one grain sugar of lead, to be given every six hours until the bleeding is checked. At the time examine bowels closely and if tenderness is detected apply a fly blister four by six inches and reapply as often as is necessary. It is a good plan to use injections of tepid water once in every four or five days, when bowels are quiet. If there should be any collection of hard, fecal matter in rectum, these injections will remove them; no collection there, no harm will result. But be sure to keep all active medicines out of them, for the great trouble to be apprehended is too frequent action, one move on bowels a week is amply sufficient, as long as there is daily move the patient will grow worse and as soon as the bowels become still marked improvement will be seen. This statement has been verified in every case, and in all cases of typhoid fever I have ever treated, which amounts to a goodly number aggregated. I have gone through with the usual form of attack from first to end.

I will proceed to notice one other grade of it sometimes, though by no means frequently, met with, which will require close attention and rather different treatment from the commencement. It is a much lower grade, asthenic variety, where the powers of vitality seem to be overwhelmed by the violence of the disease from the outset. The patients rarely ever complain, do not recognize at times that they are sick and try to get up and be attending to their usual business. The pulse is frequent and small, temperature below normal or not much above. The tongue red and dry, with the early collection on and between the front teeth. The bowels are early tympanitic, with frequent discharges or a tendency thereto. The urine highly colored, resembling strong lye. The feet and entire exterior much disposed to be cold. The whole array of symptoms grave and alarming.

The treatment of all such cases consists of stimulants and tonics at once. Quinine in morning up to noon, as in the first type. Brandy and whisky, a sufficiency to make and keep up an impression. Spirits turpentine and nitre, ℞. five drops turpentine and ten to fifteen drops nitre, every two or three hours continuously. Blister the bowels as soon as tenderness is discovered. Then with opium, tannic acid or sugar of lead control them, by which I would have them kept perfectly quiet. Rub the surface with lard and brandy twice or three times a day, with jug of hot water to feet all the time in the course of treatment. If perspiration should be too profuse the mineral acids should be used. Elixir vitriol (aromatic sulphuric acid) is a good form and I have fine results from the use of muriate tincture of iron ten to twenty drops three times a day. In this type of typhoid fever there is great danger from hemorrhage of the bowels, also from nose. The upright position should be avoided as much as possible. Bedpan or cloths should be brought into play and the patient not be permitted to get up over *dépôt chambre* to urinate or to evacuate the bowels. Serious hemorrhage is liable to occur from sitting up thus straining at stool. Injections of plain lukewarm water should be used once a week, and no active medicine given to move them. The kidneys are the great emunctories of the system, through which poisonous substances can be carried out of the body. Diuretics, therefore, can be used with great advantage in typhoid fever to eliminate from the kidneys, but let the bowels, whose mucous membrane and glands are the seat of disease, rest. In treating typhoid fever always remember to keep the kidneys moderately active and the bowels at perfect ease. The diet should be coffee and sweet milk equal parts, and this will be sufficient nourishment. There is always more danger in killing the patient from feeding too highly than from starvation.

You may expect much trouble in controlling the family and neighbors on the feeding line. Over kindness in this has murdered its thousands. The good sisters give expression to their sympathy in thus preparing something nice for the sick to eat, not thinking for one moment that this nicely prepared food is to cause death unless counteracted. Too much diligence cannot be exercised in the supervision of the diet.

There is one other form of this fever I could speak upon with some profit. It is known as Typhoid Pneumonia. This differs but little in its constitutional effects from the preceding types. The treatment, in the main, is the same, differing only in respect to external applications, and not so much in the remedies as the place necessary for their location. In this form of the disease, the lungs seem to be, and actually are, primarily affected. Inflammation in lung or lungs often runs high and rapid, and if not abated will destroy life in the course of a week or ten days.

When skin is hot and pulse frequent, the very best results may be expected from the use of veratrum, under restrictions pointed out in first type of the disease, with fly blister over that portion of lung mostly involved, applied early in the treatment.

In conclusion, I will express briefly my sentiments on the etiology and prevention of typhoid fever, as being specific from all other kinds in existence. We find well defined cases on the mountain peak as well as in the valley. Among the sparsely settled as much developed as in thickly inhabited portions of the country. No age, color, sex or station furnishes positive immunity.

The best authors claim decayed vegetable and animal matter a source of its propagation. This doctrine seems strange indeed, when the thoughtful student of medicine beholds its victims in the newly erected homes, quite as genuine a type thereof as within the dilapidated mansions of

a century. The typhoid fecal discharges are the great power of infection. The true theory of the solution, then, becomes at a glance apparent that the winds carry the germ seeds along its rapid currents, it may be, for hundreds of miles distant, seeking for intestinal abode. Who can tell but it may come thus in the majestic cyclone, or soar calmly aloft upon the bosom of some gentle zephyr breeze, and, while yet fanning the heated summer brow, be there silently inhaled.

The rational idea is that by far the greater number of instances on record, perhaps, were produced from the various food and water supplies. This can be proven almost with perfect accuracy, where it may spread from one patient to every member of a family, and a whole "community" thus become prostrated.

It is needless to say that cleanliness is next to godliness. Water, milk and all kinds of eatables should be carefully preserved and purified, rooms should be well disinfected. Plenty of fresh air should ventilate every department.

Whatever of excreta is discharged should be looked after immediately. I have found sulphate of iron an excellent preparation, put in bedpan just prior to use, and as soon as over with pour on a good portion of lime or carbolic acid water and then buried deep down in the clay, under some hillside away from home. All clothing, bedding, etc., should be washed a distance from a well, and thoroughly boiled and aired.

With these simple directions, if strictly followed there would be less typhoid fever and fewer deaths from it. The true physician will be as much interested in utilizing every available means to prevent disease, as well as to alleviate the sufferings incident to human life.

FRACTURE OF THE SKULL, WITH PROTRUSION OF BRAIN SUBSTANCE AND REMOVAL OF SAME.

BY W. R. GOOGE, M. D., ABBEVILLE, GA.

It is only recently that intrusion on the brain and membranes has been attended by so small a mortality; but owing to the great success and progress which has been achieved in antiseptic surgery, it is now of common occurrence.

It is not the purpose of this paper to let new light into the subject of brain surgery, but simply to corroborate the fact that if thorough cleanliness and strict antiseptic precautions are strenuously observed, that the time will come, and to a certain extent now is, that the surgeon may penetrate the most secluded recesses of the human mechanism, and perform wonders which were not long ago shrouded in obscurity.

The time has been, and not long ago the idea was prevalent that intrusion on the brain or membranes was attended by almost certain death; or to penetrate the abdominal walls and peritoneum was considered folly of the most aggravated type, but thanks to the promulgators of antisepsis, we can now, with impunity, perform operations of this nature with a very low per cent. of mortality, which none dare to dispute. It is a boon to humanity and should be a source of self-congratulation on the part of every physician.

Fracture of the cranium with protrusion of brain substance and removal of same, with recovery, is now regarded among the laity and also among some of the practitioners

of medicine as an impossibility, and it is the intention of the writer to disclose the results of a case of this description, and to show, if any doubt exists, that recovery in such instances is of very common occurrence.

On December 18th, of last year, Mr. A. B. Pemberton, while guarding convicts for the Ocmulgee Brick Company, at Abbeville, Ga., was struck with the eye of a common club axe on the posterior portion of the skull, near the articulation of the occipital and parietal bones, which resulted in a complete fracture, with the bone depressed and resting on the brain substance. The depressed bone had loosened quite a quantity of the brain, which, after observing the usual antiseptic precautions, I very carefully removed. It weighed just a little over half an ounce.

After carefully removing every particle of matter that could possibly be foreign, with a common elevator I raised the skull to its proper position and placed it in apposition, after which I dressed the wound with iodoform gauze, packing the wound in order to prevent the healing process of it externally, after which he was carried home and put to bed. Strange to say, he could walk and talk sensibly, still he had no recollection of the matter afterwards.

December 19. Temperature 100° F. Absence of sensation, not being able to feel the prick of a pin. Mind wandering. Gave sulphate of quinine, and ordered warm soapsuds and water every day.

December 20. Temperature 101° F. Slight sensation. Able to talk, but would lose the subject.

December 21. Temperature 100° F. Sensation returning and complaining of pain in left arm. Wound was on right side of head.

December 22. Temperature 99½° F. Pain more severe on left side. Sensation almost restored. Gave hypodermic of morphia and atropine.

December 23. Pain gone. Sensation restored. Appetite

good. Had eaten nothing since injured, being very much nauseated all the time.

December 25. Temperature normal. Dressed wound and strange to say found no pus whatever. Patient able to sit up for dressing wound.

December 27. Patient walked up town, a distance of one quarter of a mile, contrary to my directions.

January 1. Bone had healed, and removed packing from wound.

January 5. Wound granulating nicely.

January 10. Discharged patient with the wound almost well.

Janunry 28. Patient thoroughly well and accepted a position on S. F. & W. R. R., as section master.

The question might naturally arise, are you sure that you removed the brain substance, and in reply I would say that I was never surer of anything in my life, and can corroborate every assertion by my associate, Dr. A. R. Royal.

DISCUSSION ON DR. GOOGE'S PAPER.

Dr. F. W. McRae, opening the discussion: Mr. President, it seems to me this is too important a subject to the surgeon and physician to go by without discussion. We all know that it has been the practice in a large number of injuries of the head not to operate. A number of patients are consigned to a life of misery or imbecility by the non-interference of the physician at the time of the reception of the injury, and the result such as Dr. Googe has reported may be obtained by the treatment which he has adopted; and it seems to me it is our duty as physicians, where we have injuries to the head, with symptoms following, to operate. Where there is doubt as to a depression or fracture of the skull, it is much better with strict antiseptic precautions to operate than to allow the patient to run the risk of subsequent troubles, such as epilepsy, which may

result as a consequence of injury to the skull when the external table is not fractured at all. Where there is no fracture there may be rupture of a vessel underneath. It may be subdural or supradural, as the case may be, causing symptoms and inflammation sufficient following it to permanently disable the individual. I have had several cases, but none as bad as the one reported, where I have gotten brilliant results by early operative interference. I recently had a case in which a horse pawed a man in the center of the head, making a depression in the superior longitudinal sinus and causing rupture of that vessel. There was no injury to the brain, but there was a marked depression of that piece of the skull and most violent bleeding. With my best efforts it seemed impossible at first to stop the hemorrhage, but by sticking my finger into the opening I finally controlled it. I could not trephine it. I took a gouge and removed a piece of the skull large enough to admit the elevator. I then introduced the elevator and raised the depressed bone. I never was more anxious about a patient in my life than during the hemorrhage when I was gouging. I hardly knew what procedure to follow, but I did the best I could under the circumstances, and that was to pack the superior longitudinal sinus tightly with a strip of iodoform gauze in order to prevent hemorrhage. The man was at his work three weeks after the injury without any trouble. I saw him two weeks afterwards in an intoxicated condition, and sent him home in a hack. What I have said is simply to emphasize the points brought out in the doctor's paper.

Dr. J. McFadden Gaston, of Atlanta: I have a case that I would like to mention, which is a little different from the one reported by Dr. Googe, and there are some points of considerable inserest in it. Instead of it being a case of fracture of the skull with protrusion of the brain

substance, the injury was about the point at which he describes, near the junction of the parietal and the occipital bone. Without any evidence whatever of fracture, there came on symptoms that indicated compression of the brain, and I was preparing to enter upon the operation of trephining, notwithstanding the absence of evidence of fracture, when under the action of medicine, the patient having taken a dose of calomel, and afterwards salts and senna, the indications disappeared and the idea of trephining was abandoned. The case ran from one stage to another to a fatal result. A post-mortem examination was made for the purpose of determining the character of the injury. It was found that, instead of the effusion taking place in the immediate vicinity of the wound, sanguineous coagulation from the rupture of the cerebral vessels had taken place at the anterior portion of the hemisphere, and was at least six inches distant from the point at which the injury was received. Unless cerebral localization can be carried to a more satisfactory point than it has yet reached, although we are making rapid strides in this direction, we will not be able to determine definitely *when* and *where* to trephine. Naturally I should trephine in the region of the injury, under the supposition that I had a blood clot in that neighborhood, but the result of our examination in this case showed that there was rupture of a cerebral vessel, and that about six inches distant an extensive blood clot formed which led to cerebral inflammation and ended the life of the patient.

I have another case which I will report briefly to show the importance of detailing post-mortem results, as they give us more correct indications as to the result of the injury. A man received a blow on the side of the head, simple linear fracture, without compression. It was not known the man was seriously injured. He left the house where the brawl occurred and went to a distant part

of the town, and being in the night he tumbled down and died. When discovered the result of the examination was, that there was a blood clot immediately beneath the point of fracture. If an operation had been performed immediately over that point, it would have detected, no doubt, the coagulated blood there, and the surgeon would have been able to remove the injury. So we never can know what to depend upon in injuries of this kind.

I report these cases in contrast with the case reported by Dr. Googe, as showing that operative measures ordinarily should be undertaken more frequently than they are. No one would anticipate that a blood clot would be formed at such a distance as was realized in one of the cases I have outlined. In the other case the trephine, if the patient had been found sufficiently early, could have been used over the linear fracture with a successful result.

Dr. J. G. Hopkins, of Thomasville: The case reported by Dr. Gaston brings to my mind one that will tend to to show the impossibility of locating the blood clot under such circumstances. The case did not occur in my practice, for it was before I was a practitioner of medicine. I saw it about twenty-two years ago at Barnesville in this State. The lamented Dr. McDowell was then practicing at that place. He knew I was studying medicine and asked me to see the case with him. The patient was a negro who was struck on the right side of the head with a board in the hands of a boy fifteen or sixteen years of age. The negro was after the boy's father with an axe, and the boy seized this piece of board and struck the negro on the right side of the head, felling him to the ground. The negro walked some distance away and it was quite awhile before he became unconscious. It was about sundown that the accident occurred. It was 11 o'clock the next day when he was brought to Barnesville in a wagon. We found the external injury on the right side of the head

where we had been told he was struck. The hair was knocked off, scalp bruised considerably, but there was no depression. The negro was evidently laboring under compression of the brain. We removed part of the scalp and undertook to trephine him, and although there was no evidence of fracture, the doctor thought it best to trephine anyway, and he did it. The patient died before the operation was completed. The skull was opened, and just above the ear on the left side the bone was fractured to a considerable extent, and we found extensive extravasation of blood at that point. There was an almost indiscoverable crack running across the skull to the point where the blow was received. There had been but the one blow given. We considered it a remarkable case, one of those rare cases of *contrecoup*.

Dr. C. D. Hurt, of Atlanta: I wish to report a case which I had the opportunity of witnessing, an injury of the skull and the superior longitudinal sinus. A negro man was caught by a circular lath saw which was in rapid motion. It split the skull the entire length of the sagittal suture and a half inch or more into frontal, cut the hat into fragments, carrying a portion of it through the opening into the skull, and threw some brain tissue up against the ceiling. He seemed to be dead after the injury and the physician who had him in charge, thinking the man dead, undertook to do nothing for him, but he finally decided to dress his wound. He was placed upon a litter, carried to the physician's office, his head shaved and the wound bound together with adhesive strips. The patient was then taken to his bed. He was unconscious for ten or twelve hours, and showed no disposition to move himself for days after receiving the injury. He was nourished by a milk liquid diet for two or three weeks. Suppuration set in. At the time of the injury there was considerable hemorrhage, but it was not alarming. However, the pa-

tient grew better with the process of suppuration and with cartilaginous union at the end of eight months. The last portion of the fistulous opening which closed was about the anterior fontanelle; in other words, there was complete occlusion at the expiration of eight months after the reception of the injury. In less than twelve hours thereafter the man began to have convulsions and died within three or four hours. I regard this case as an exceedingly interesting one and rare. It came under my observation and not under my care. Without complete occlusion and the accumulation of pus upon the brain the man would likely have lived for an indefinitely longer period.

CONTINUOUS DECALORATION IN PYREXIAS.

BY A. B. SIMMONS, M. D., SAVANNAH, GA.

Since the introduction of the cold baths by Currie more than one hundred years ago, for reducing the pyrexia of certain fevers, they have gradually grown in favor until now they are recognized to be the most powerful means we have of withdrawing heat from the body.

In private practice, however, baths are cumbersome and inconvenient, and we seek other means of accomplishing the same good, without the disadvantages attending their use.

Various plans have been practiced for obtaining this result, such as the wet sheet, cold pack, napkins wrung out of ice water and applied to the chest and abdomen, ice to head, and to the back by means of the spinal ice bag, etc. The first mentioned have the same disadvantages as do the baths, while the latter have been considered as applicable to mild cases of pyrexia or as adjuvants only of other antithermic agents.

A method that, in my hands, has seemed to meet the indication is the application of shaved ice in the ordinary hot water bag or similar vehicle to the nucha, spine and abdomen, and at either side of patient. Supplementary bags were placed in various parts of the bed when intense hyperpyrexia demanded a rapid reduction of heat of the body.

As soon as the ice melts it is changed and so on continuously until the temperature falls to 101 or thereabouts, and near that point it can be easily kept by a judicious manipulation of the ice bags.

They are not placed in immediate contact with the skin, as folded towels are placed between patient and bags and their foldings are increased or diminished as the subsequent course of the temperature determines.

Then by shifting the towels the cold is brought into closer proximity to the patient or the reverse as the exigencies of the case demand.

I have recently used this method with beneficial result in a grave form of typhoid fever. This case had run an unusually severe course, the temperature remaining high with but small morning remissions.

The usual antipyretics were used, quinine, acetanilid, phenacetine, salol, but the fall of temperature was slight, and the depression great. Cold baths were tried and were abandoned on account of prostration of patient and the necessity of their too frequent repetition.

The patient in the fourth week was in a profoundly adynamic condition. Pulse frequent and feeble, temperature 104° and above, bowels tympanitic and moving rapidly, muscles twitching involuntarily, hiccough, albuminuria. Owing to this condition all the above remedies were suspended and the ice commenced.

It is needless to say that stimulants had been given and were continued. One bag was put to nucha, one to forehead, two were put to the spine, one to abdomen, one on each side and others in various parts of the bed. The elimination of heat was so great that a change was required every forty minutes, and three hundred and fifty pounds of ice was used the first day.

The temperature gradually declined and in a few hours it reached 104°, about which it remained for two weeks when patient was convalescent.

All nervous symptoms disappeared with the fall of temperature. Without apparent cause on twelfth day of convalescence a relapse occurred and ran a similar course to

the first attack, lasting, however, about twenty-one days, while the original continued to the thirty-eighth day.

Nothing beyond ice bags were used during relapse, and while the tendency of temperature curve was high, it was readily controlled. There was no return of the alarming nervous symptoms and the patient made a rapid recovery.

This method substitutes a dry for a moist cold, its action is continuous, in contrast to the interrupted baths. It can be rapidly applied, is agreeable to the patient, does not demand any exertion from him and does not disturb him if asleep.

Easily controlled, safe, and thoroughly efficient, it has some decided advantages over other methods of managing high temperature.

SYPHILIS FROM A SOCIOLOGICAL STAND-POINT.

BY WILLIS F. WESTMORELAND, M. D., ATLANTA, GA.

No matter in what manner you look at this subject it is necessarily of infinite interest. Particularly is the origin one of interest to Americans, as a great many authorities think that the origin of syphilis coincides with the landing of Columbus in Spain, on his return from discovering America. That his sailors contracted the disease in this country, and that it was introduced into Europe by them when they landed at the ports of Lisbon and others (Seville, etc.) in Spain, March 6th, 1493.

If these authors are true, would it not be a terrible blow at the morality and virtue of Europe, if a handful of sailors landing at a few ports in Spain, should inaugurate a disease that in a year or two proved the scourge of Europe. Being declared, as it was, epidemic in 1494, and extending its vicious ban across to France, so that the parliament of Paris on March 6th, 1497, issued a decree, expelling from Paris all who were suffering from it? Thence across the waters into Great Britain, to such an extent, that the King of Scotland passed a similar decree in the same year.

It seems almost impossible that syphilis could have spread with such rapidity, even acknowledging that it was sometimes much more virulent than at others, allowing for a treatment which at that time probably aggravated rather than cured it, unless a great portion of it was contracted otherwise than by sexual intercourse, and this is the particular point of which I wish to speak.

Naturally in a paper of this scope it is impossible to do otherwise than simply touch upon this subject which has been so vividly impressed upon my mind, by experiences both in clinical and private practice. And how close it comes home to all of us, and how little protection any of us, particularly the laity, have against it!

Year after year, particularly in the clinics, syphilitic subjects, a great many of them women, come before me suffering from this disease in all its stages, from the original lesion to the worst ravages of the second and tertiary stages, with mucous patches and syphilitic ulcers covering them.

And when I find, upon investigation, many of them servants, occupying various household positions as chambermaids, nurses, cooks, waitresses, etc., I cannot but think God protects the family exposed to the baleful contamination of their services, and particularly the poor little defenceless ones whom they nurse, and with whom their relations are so intimate.

Any one who has not investigated this subject will be overwhelmed with surprise at the number of cases acquired otherwise than by sexual intercourse, and the various means by which it has been transmitted.

Syphilitic poison is readily carried by either the secretions of the initial sore chancre, or mucous patches, syphilitic ulcerations, or the blood, to an innocent person. Transmitted by direct infection, where any of these secretions of a syphilitic nature come in direct contact with some slight abrasion on the body of a healthy person, or indirect infection, by the secretions adhering to wearing apparel, instruments, or the various articles of household conveniences, and which prove the various means of transmitting the infectious poison to the unsuspecting innocent. The list of these articles is appalling.

Physicians and dentists are themselves exposed, and likewise expose their patients to these dangers. Thousands of physicians and midwives, in the practice of their calling, in examining and operating on syphilitic subjects, or by *post-mortems*, are exposed. Dentists are likewise exposed by having their fingers scratched against a rough tooth or instrument, while working on a patient whose mouth is filled with mucous patches.

On the other hand, many more patients are infected by the carelessness of physicians. They may examine patients with an unsuspected chancre on their finger, or with carelessly cleansed hands or instruments, for some of these secretions are thick and tenacious, and when dried cannot be removed by ordinary washing. Think of sixty patients being inoculated with this disease, as the result of eustachian catheterization in the practice of one person. Ten innocent, helpless babies, inoculated at one sitting, by being vaccinated from a syphilitic child!

It is a shame to our profession that the literature on this subject is filled with these cases. It is worse than shameful, for it is the result of criminal carelessness.

And now we turn to another class of cases, where we are also to blame, though not so much as in the former. When patients first come to us with syphilis, they are frequently in the most abject state of horror, as to what the results will be, believing that they are tied down for life by a loathsome disease, for they have viewed every symptom through a magnifying glass.

In trying to relieve their minds of this absolute dejection, the physician is apt to make light of the symptoms and disease. The patients in time, as their mental and physical sufferings are alleviated, do the same, and begin to neglect both treatment and the precautions you have emphasized upon them to take, that they may not transmit this disease to their relatives, friends or associates. Par-

ticularly is this true of the lower classes. Others will willfully disregard all injunctions you may give them.

It is a horrible idea that possibly some relative or dear friend is at this moment employing a syphilitic nurse for his children, who is affectionate, and fond of caressing them, who chews their chewing gum till it is soft, so it won't hurt the poor little one's teeth, who always tries the nursing bottle first to see if baby's milk is of the right temperature, and who is fond of dearie's rubber rings, or a chambermaid who not only touches every article about the house, but possibly uses them, perchance your toothbrush.

Perhaps a cook, who prepares every article of food, washes and handles the dishes, knives and forks, eating out of them, drinking out of the same cups and glasses, and is possibly a little careless about the amount of water she uses in cleaning them. May be a young man with a mucous patch on his lips, calling on his sweetheart, wipes a chapped lip with a handkerchief he has used on his own, or kisses her good night. Instead of his sweetheart, it may be his mother or sister who is the unfortunate sufferer, and presents herself to us later with a chancre on her lip. There are numbers of such cases.

Think of these poor unfortunates "cursed by the heritage of the sin they have not sinned!" I think it justifiable for the physician to warn those most interested, where the patient continues to disregard and ignore the precautions you tell them to take. But we will not discuss this, as this paper is only written to call your attention to the evil and not the remedy.

Sadly we close with a few words on hereditary syphilis. We have nearly all seen these cases. The syphilitic husband, who in spite of our earnest advice, impregnates his wife. And still sadder the man, who regardless of our counsel as to the disastrous results, marries some sweet innocent woman, the one who is all the world to him (we

have all seen them), afterwards coming to us, sad-faced and hollow-eyed, showing the watchful strain of anticipations they have been under, as they begin to appreciate our words are coming true. We have all listened to them as with trembling lips they tell us they could not realize, did not dream of this heartrending occurrence. That they would have died first. Then they feel their error. Now they see what their love was, the

> Love, that breeds its own decay,
> Rotten, ere the blossom burst.

Then we go to the poor, unfortunate wife, and do what we can for her, occasionally able to accomplish something, most frequently not. And in a few weeks or months, deliver her of a syphilitic child. And when we return and see the mother hugging and kissing and cooing to the horrible looking infant, for no matter how ugly the ones begotten they love and cherish them all the same, for whom there will soon be another laceration of the heartstrings, caused by its loss.

We can but think:

> Blest is the babe that dies within the womb;
> Blest is the corpse which lies within the tomb;
> And, blest that death for which this life makes room.

But even then the sad echoing refrain of anguish wrung from a mother's tender heart is borne to our ears:

> But dreary is the tomb where the corpse lies;
> And wretched is the womb where the child dies;
> And cursed that death which steals this life's disguise.

DISCUSSION ON DR. WESTMORELAND'S PAPER.

Dr. R. P. Cox, of Rome, opening the discussion: desire to express my appreciation of the excellent paper that has just been read by Dr. Westmoreland, and to call attention to one way by which I believe syphilis is transmitted. A great many dentists employ carbolic acid to

cleanse their instruments, and others do not. These instruments ought to be boiled after use. Every man has more or less dental work done every year, and it is well to keep this in mind. I have heard of cases where dentists have touched the gum with an infected instrument and transmitted the poison of syphilis—the parties thereafter getting syphilitic sores. I know of a case where a young man in a railway carriage, who had a little abrasion on his lip, contracted chancre by drinking water from the public cup. He kissed his sweetheart and communicated the disease in that way to her also.

Dr. F. W. McRae, Atlanta: I wish to also express my appreciation of the paper presented by Dr. Westmoreland. It is very timely, and one which I most heartily indorse. All of us who do genito-urinary practice will meet with these cases, and he has mentioned some of the possible sources of contamination; but, as the author has said, to enumerate all of them would take pages of a closely written paper. I have recently had two cases which very strikingly illustrate the points which he has brought out. One of them was a beautiful woman, who had been married for a few years, the mother of one child, living at her mother's house where there were a number of children. She came to me, and I saw a chancre on her lip and the syphilitic eruption upon her body. She had been taking treatment from Christian scientists for about four months. During that time she was using the same napkins, drinking out of the same vessels, and living in the midst of twenty people. She could not explain the source of the poison, but I ascertained that her husband had been in Chattanooga shut up in a dark room for two months with syphilitic iritis, and had probably communicated the disease to her by kissing.

A man came to me, the father of several children, with a sore on his penis, who did not have any of the character-

istic appearances of chancre. I advised him to be extremely cautious, not to have anything to do with his wife, but to come back to see me again. I did not impress upon him as deeply as I should have done the danger to his wife and children. I heard nothing more from him for several weeks. About two months thereafter he came for me to see his wife, one of the purest women I have ever known. I found a chancre upon the labium, with the secondary syphilitic eruption all over her body. She was then nursing an infant about three months old. I put man and wife at once upon treatment. So far as I was able to judge, the mother has been faithful in carrying out the treatment. These cases come to us right along, and we are subjected to the dangers which have been mentioned by the gentleman who has preceded me. I have known of several physicians who had chancre from delivering women who were the subjects of syphilis at the time of the accouchement.

Dr. M. B. Hutchins, of Atlanta: The paper that Dr. Westmoreland has read is one that has impressed me very much. The syphilitic poison is a very virulent one, and I do not suppose that anybody ever knew of a non-syphilitic who was properly exposed who did not get poisoned with syphilis. Just as sure as there is any slight excoriation or abrasion of the mucous membrance and the epidermis deep enough to get down to the absorbents, and the syphilitic poison comes in contact with the abrasion, it will take hold. The wonder is, that there are not more people who have syphilis, as the chances of contagion are so numerous, and more especially is this seen by those of us who are engaged in special lines of work. Nearly every physician has seen or read of cases of extra-genital chancre, or those cases of syphilis produced in an innocent way. I have seen quite a number of cases of the disease produced in an unusual way. The history was simply that of accidental contagion.

In one of these cases the lesion was on the cheek of a young man. The history was, that for some time his working companion had several mucous patches in his mouth as well as a generalized eruption over the body. He tried to bite the ear of the innocent person in play, and inoculated a scratch in front. A typical chancre is developed, and the man had the macular eruption of syphilis, which was controlled by proper treatment.

The next case demonstrates the punishment a man gets sometimes for practicing medicine without a license. He was sent for to deliver a child. He went, made an examination, and he knew the husband of this woman had had a sore on his penis. As a result, the man got a chancre on his finger, the macular eruption, then maculo-papular eruption of syphilis, and later he died of syphilis (apparently) and alcoholism.

There are cases which have been recorded of people communicating the disease with everything that could be used, such as chewing gum; the lady of the house getting hold of the chewing gum of the servant, or *vice versa*. The disease has been communicated by young men who have been fortunate enough to get engaged to as many as two young ladies while they had a chancre on their lips, all three coming under the care of the same physician.

The celebrated water-closet way of contracting the disease is illustrated in a patient I saw in consultation in Atlanta. He had the remains of a chancre lesion on the frænum of the penis. He had developed the macular eruption of syphilis, but could not imagine how he contracted the disease, save from the commonly used closet.

Dr. Westmoreland, closing the discussion: There is one particular point that I desire to call the attention of the Association to in closing, and that is where a married man having had syphilis and his wife does not present, even during the whole time of impregnation, any manifestations

of the disease, it is no reason why she should not be subject to treatment. It is a well established law that such women get syphilitic children without showing any external manifestations of the disease. In cases of this kind the woman becomes impregnated through her husband who is syphilitic, and it is always a good precautionary measure to put her on strict syphilitic treatment, even though she may not exhibit any manifestation of the disease. I bring this point up in order to impress upon you its importance. You can readily see that it is very essential for the safety of the child that they be put under such treatment.

A CASE OF ANEURISM OF THE THORACIC AORTA.

BY N. P. JELKS, M. D., ALBANY, GA.

On the 30th of December, 1891, I was called to see R. G. L., age thirty-four, banker, a man of great energy and will power; not very strong physically, but capable of great endurance. In fact, he seemed never to tire at any undertaking. I found him suffering with acute pain in the third intercostal space—right side—with tenderness on pressure, over a point the size of a half dollar, between nipple and sternum, one inch from nipple. Diagnosis: Intercostal neuralgia. The treatment was in accordance with the diagnosis. After three days' treatment he recovered sufficiently to attend to business, but was never clear of pain On February 1st, following, I left home for Florida, remaining away two weeks. On my return I was called in again to see him, and found him in great pain. Had been confined to his bed several days. During my absence Dr. A. A. Smith had been called to treat him. His diagnosis was intercostal neuralgia. After three weeks' treatment with quinine, hypodermic injections—night and morning—of morphia and atropia in large doses, counter-irritants, cupping, etc., he again improved sufficiently to leave his bed and attend to business, but never free from pain. I continued the hypodermics once each day for several days. The pain became less intense, and his spirits were raised in proportion. The morphine was gradually left off. On April 10th I was again summoned, and found him suffering most intensely. The pain was described as cutting or

piercing in character, and extended through the chest to a point opposite posteriorly. After two or three days' treatment of same kind described above, the point of tenderness and pain changed from the original site to within one inch of edge of sternum, same intercostal space. On the 16th I detected a very small tumor over seat of pain, but no pulsation; tenderness much increased. I hoped I had only a superficial abscess to deal with, but this hope was blasted. On the 18th I detected slight pulsation. Fearing I had that frightfully painful and fatal disease, aortic aneurism, to encounter, I called in Dr. Smith again. He was in doubt, but suspected aneurism of thoracic aorta. After treating the case for a week on the expectant plan, we found no improvement, but on the contrary, a steady growth in tumor, with most intolerable pain. Although there was no "bruit" heard, though repeatedly examined, with and without the stethoscope, we pronounced the case aneurism.

My patient and family becoming more alarmed, and being anxious to have help from an experienced surgeon, Dr. W. H. Elliott, of Savannah, was sent for at the suggestion of my brother, Dr. E. A. Jelks, of Quitman. After a most careful examination, finding no abnormal sound in the trachea or tumor, or any part of chest walls, his diagnosis was a tumor situated in or near the arch of aorta, but *not* aneurism. Prognosis unfavorable. Dr. C. H. Colding, of Savannah, also saw the case at the same time, and agreed with Dr. Elliott in his diagnosis. The latter aspirated the tumor and drew off a small quantity of thick reddish looking liquid, which, without submitting to a chemical test, we thought was pus and blood. This confirmed Drs. Elliott and Colding in their diagnosis and correspondingly reassured Dr. Smith and myself in ours. During the operation, one-half of the tumor on side the needle entered, subsided to half its orignal size and remained so for two hours, after which time it regained its original size and shape—oval in

form. I wrote to Dr. Elliott of the rapid refilling of the tumor, and in his reply of May 2d, this sentence occurs: "Whether this is an aneurism or not, one thing is plain, our patient must be kept out of suffering," thus showing, that his mind was in doubt as to his diagnosis.

The week following his visit, I wrote Profs. Austin Flint and J. Lewis Smith, of New York, and propounded this question (after giving them a brief history of the case): Do aneurisms ever contain pus? To this I received nothing satisfactory in reply.

The tumor continued to increase rapidly in size. Pain became a much more prominent symptom. I have never, in twenty-five years' practice, seen any patient suffer such constant and prolonged agony. At irregular intervals he would have paroxysms of most excruciating suffering, accompanied with symptoms of syncope. During these atacks, which were relieved with very large doses of morphia and atropia, he expressed himself as feeling like "the tumor would burst open every second." These paroxysms always came on suddenly, accompanied with enlargement of tumor. This sudden enlargement of tumor was always followed by rapid reduction, which continued until the tumor returned to its original size.

On May 20th, Dr. E. A. Jelks, of Quitman, saw the case. He punctured the tumor and drew off a drachm or two of the fluid contents of its cavity. This fluid was similar in appearance to that obtained by Dr. Elliott. Dr. Jelks' diagnosis was aneurism of arch of the aorta.

Tumor now grew more rapidly in size. Pain much more intense and extending occasionally down the right arm. So great was the suffering, that my patient clamored for an operation of some kind. On May 28th we again punctured tumor and took out a small quantity of the fluid. This was sent to Dr. L. H. Jones, Professor of Chemistry in the Atlanta Medical College, and Dr. M. B. Hutchins, of

Atlanta, to analyze. Dr. Jones, after making the analysis, thus writes:

"I find that the fluid gives chemical evidence of albumin, responds to the chemical test of pus, has a slightly alkaline reaction. Under the microscope, I find some red blood corpuslces, but vastly more *pus* corpuscles. Judging from above facts, and from the letter to Dr. Bizzell, which Mr. Jelks requested me to read, I should suppose that you have to deal with an accumulation of pus, and that the aspirating needle, when introduced, punctured some small vessel, thus pouring out some blood and giving the fluid a bloody appearance. That the *mass* of the fluid is *pus*, I think admits of no doubt." Italics my own.

Dr. Hutchins writes:

"The microscope showed me *red and white blood corpuscles and pus cells. A few epithelial cells and micro-organisms usually* seen in decomposing fluid, probably accidental. Not likely an aneurism."

The result of these tests was to place Dr. Smith and myself (as it were) "between two fires." On the one hand the clinical history and physical signs ("bruit" excepted) led us to pronounce the disease aneurism. On the other hand, the previous statement of Dr. Elliott, who has seen many cases of aneurism, and the chemical and microscopical examination of the fluid, proved directly the opposite. *Not* aneurism! For who had ever seen an aneurism whose contents were almost entirely composed of pus? No one could be found. So we consulted each other again, for the twentieth and thirtieth time, argued both sides of the question, and finally came to the conclusion *we* were wrong. We could not fight experience and judgment, armed with both chemistry and the microscope. We succumbed and concluded that something must be done, or we would soon lose the opportunity. Our patient was growing rapidly weaker. The tumor had assumed large proportions, extending from

one inch on left of edge of sternum four and a half inches to the right, breadth four inches, with general bulging of chest walls on right side. There was not at this time, nor previously during progress of the case, any marked difficulty in either breathing or swallowing. We decided to aspirate the tumor and draw off all of its contents, although it was evident the termination of the case would soon be fatal.

The fluid which first flowed through the instrument was almost pure pus, with only a trace of blood. The patient seeing this exclaimed, "Thank the Lord." The poor fellow rejoiced in the hope then of a speedy recovery, but alas! the hope was short-lived. This flow of pus was, in a moment, followed by the same fluid sent to Atlanta to be tested. After about half an ounce of this was taken, pure blood began to flow; becoming alarmed, we withdrew the needle and closed the opening with adhesive plaster.

About the first of June Dr. H. J. Williams, of Macon, was sent for, who after a long examination, heard the aneurismal murmur posteriorly near the inner edge of the scapula, between the third and forth ribs. Nowhere else could it be found. This was the first time it had been heard in that region, although many times hunted for. From this time it could always be heard, but only there. The sounds over tumor continued same as at first, similar to the normal heart sounds; but exaggerated in intensity. There was, of course, no more doubt of the character of tumor. Dr. Williams informed patient of the nature of his disease, and its probably early fatal ending. He bore the sad news with his usual Christian fortitude and remarked: "It is all right."

On my visit the next morning, I saw, that notwithstanding all the disappoinments he had had during the tedious course of this most painful affliction, hope had revived. I could scarcely tell which to admire most, the fortitude, faith and hopefulness of the man, or the self-control and cheer-

fulness of his faithful loving wife, who never at any time during his illness gave way to her feelings.

Tumor continued to grow and patient clamored for another operation. Dr. Williams was called again on the 8th. After consultation, we concluded to attempt the introduction of silver wire into cavity of tumor, as it gave some slight hope of causing coagulation of blood in cavity. The family were informed of our decision, also of the seriousness of the operation, and consented to give him the benefit of the chance, slight as it was. He, of course, was willing and ready to submit to anything that gave the least hope, and was much more collected than his sorrowing mother.

The operation was not a success, it being impossible for Dr. Williams to introduce the wire, owing to extreme smallness of the wire, as he thought. From the time of the operation patient grew steadily and rapidly worse, and on the 20th of June he died in great agony during one of his paroxysms.

Throughout his whole illness, protracted (lasting six months) and painful as it was to most extreme degree, no one ever heard him groan or utter a complaint except his devoted wife and medical attendant, and then only when suffering with the awful paroxysms. At the time of death tumor was five inches in length by four and a half in breadth.

Post-mortem examination was refused by the family, although insisted on. This I very much regret, as it would undoubtedly have thrown much light on this very rare and interesting, as well as instructive case.

This case has been reported because of the great difficulty in making a correct diagnosis, even after it had been under treatment for several months, although seen by some of the most skillful and experienced surgeons in the State, and because of the strange character the tumor presented. First, the complete absence of the "bruit" for months, and when

heard, found only posteriorly. Second, the unusual character of its contents. I have seen no physician or surgeon who has ever seen or read of a case of aneurism containing pus in *decided* quantity; nor have I ever read of a case of that kind. Possibly some member of the Association has been fortunate (?) enough to have had such experience.

STONE IN THE BLADDER WITH REPORT OF CASES.

BY FLOYD WILCOX McRAE, M. D., ATLANTA, GA.

In treating of this subject, I shall speak succinctly of the etiology, symptomatology and treatment of stone in the bladder, purposely avoiding extensive details and references to authorities.

The chief predisposing causes—defective digestion and assimilation due to improper diet, to a preponderance of solid over liquid ingesta, or to too high living coupled with insufficient exercise and imperfect oxidation. Whatever the cause, there is always an excess of the solids of the urine. These, however, are only predisposing causes, and colloids, as mucus, pus, etc., due to inflammatory conditions of the urinary mucous membrane, must be present before stone in the bladder will result. Constitutional vices, such as gout and rheumatism, and the allied condition lithæmia, are important causative factors. Enlarged prostate and stricture of the urethra, with the inflammatory changes resulting therefrom, act as immediate causative factors in a small proportion of cases. The extremes of life present the larger number of cases. Males are much more frequently affected than females. The children of the poor are more subject to vesical calculi than those of the wealthy, because improper and insufficient diet and insalubrious surroundings bring about that condition of the system most favorable to the development of stone, just as we have the same conditions resulting from excessive indulgence in rich food and

alcoholic beverages, coupled with insufficient exercise, in the other extreme of life in the wealthier classes.

The large majority of calculi are composed of either uric acid or phosphates. The former predominate in children, and the latter in the aged. Renal calculi, foreign bodies, etc., passing into the bladder, act as nuclei and grow by accretion of urinary salts. In not a few cases the development of stone in the bladder will have been preceded by the descent of a renal calculus with its concomitant symptoms. A history of nephritic colic not followed by the expulsion of the gravel through the urethra, would naturally lead us to suspect the formation of stone in the bladder when there is subsequent irritation of that viscus.

Frequent urination, worse during the day than at night, increased by exercise, is one of the earliest symptoms. This is, in the majority of cases, accompanied by pain of a gnawing, burning character referable to the end of the penis, and which is relieved by pulling the prepuce or pressing the glands. Children thus not infrequently acquire the habit of masturbation. Boys with stone in the bladder very frequently present elongated and irritated prepuces, brought about by constant traction for the relief of the pain. Sudden stoppage of the stream during micturition due to a small calculus having engaged in the neck of the bladder, is another of the earlier and more important symptoms. This condition is frequently relieved by change of position, so that the victim of stone in the bladder soon learns in what position the urine may be passed with the least pain and voids the urine in that position. Hæmaturia is also a symptom of some importance, especially if only present at the end of micturition and accompanied by other symptoms. Reflex pains, especially persistent podalgia, are often significant symptoms. Priapism, muco-pus in the urine, etc., are of minor importance.

None of the symptoms thus far enumerated are pathog-

nomonic of stone in the bladder. Only when the stone can be felt by the searcher and the characteristic click elicited are we sure of the presence of calculus in the bladder. Even then there are possible sources of error, such as the presence of incrustations and indurated growths. Nor is the failure to find the stone with searcher proof that one does not exist. There are several sources of error here also, viz., a small stone behind an enlarged prostate, encysted stone or stone contained in a diverticulum. Thus it is clearly seen that in a certain small proportion of cases the surgeon finds it difficult to know just how to proceed. Whether it is better to operate in the face of a probable failure to find a stone, or to let the patient suffer till the suffering becomes unbearable, or a positive diagnosis may be made, is a question by which the surgeon is sometimes confronted. Where, however, the discomfort is great it seems to me it is better to operate, for usually when a stone is not found other conditions obtain that are susceptible of operative relief.

In one of the cases which I shall report further on the symptoms were characteristic of stone in the bladder, although no stone was found. The operation, however, was a brilliant success in relieving the patient of a most violent cystitis of long standing.

In stone in the bladder, just as in most other diseased conditions, each case is a law unto itself, and must be treated on general surgical principles. The operator who wisely determines as to the best method of procedure in each individual case, other things being equal, will get the best results. Of first importance is the prophylactic treatment, *i. e.*, the treatment of lithæmia in its various manifestations, including renal calculi. Also the treatment of those obstructive and inflammatory conditions which are such important factors. As already stated, in the formation of stone I have only mentioned the prophylactic

treatment, with no intention of entering upon the consideration of this interesting and important part of the subject. I have intended in this paper to discuss only the surgical treatment of stone in the bladder. Of all the methods of treating stone in the bladder none has so wide a range of applicability and so low a death rate as litholapaxy (Bigelow's operation). I have, however, had no personal experience with it, as the cases thus far presenting themselves to me were such as seemed to me were more amenable to other procedures. This operation offers much the best results except in very young children, very large or very hard stones, or where there is coexisting tight organic stricture, or enlarged prostate of such character as to prevent the introduction of the lithotrite, or where there is a violent cystitis due to the presence of a stone. For large stones associated with prostatic or vesical tumors, the high operation is undoubtedly far superior to any perineal operation. Small stones associated with stricture of the deep urethra or violent cystitis are best treated by the median operation. Nor is the lateral operation to be entirely set aside for the now more popular operations of litholapaxy and suprapubic lithotomy. Each of these operations has its proper field of usefulness, and it is only by a careful selection of the methods of treatment that the best results are to be obtained.

Case 1. Mr. F., age seventy-two years. Fat, fleshy, very flabby, weight about two hundred pounds. History of bladder trouble extending over a period of five years, during which time had had two attacks of left hemiplegia. Marked cystitis existed, for which various internal remedies and vesical injections had been used with little effect. Large quantity of pus and mucus in urine associated with blood, the latter being greatly increased by exercise. Constant feeling of weight in bladder and occasional violent pains, spasmodic in character, and aggravated by locomotion. No relief from treat-

ment. Sounding bladder failed to demonstrate presence of stone. Operation undertaken at the urgent solicitation of patient and friends. Suprapubic cystotomy decided upon. Operation August, 1890, assisted by Drs. V. O. Hardon and L. P. Kennedy; chloroform anæsthesia. Large phosphoric calculus (weight about eight hundred grains) removed. Operation completed in usual way. Patient's condition excellent; rallied promptly from anæsthesia; no vomiting. Drainage excellent. No unfavorable symptoms until morning of fifth day, when deep coma suddenly supervened, and death resulted a few hours later. Temperature never rose above 101° F. No post-mortem. Wound in very healthy condition. Death probably due to cerebral hemorrhage.

Case 2. S. M., age two years. Well nourished. History of "gravel." One small gravel removed by attending physician from fossa navicularis, a few weeks prior to operation. Retention of urine.

Operation May, 1891, assisted by Drs. L. P. Stephens, L. P. Kennedy, L. B. Grandy and C. C. Johnson. Chloroform anæsthesia. Meatus enlarged and five small phosphatic calculi removed from anterior urethra. Sound arrested by calculus impacted in prostatic urethra. Decided upon left lateral operation, which was immediately done. Large quantity of phosphatic *débris* removed from bladder. No well formed calculi—so soft that they were crushed as soon as grasped by forceps. Bladder thoroughly irrigated. Subsequent history uneventful. Recovery perfect. No return of trouble.

Case 3. Negro, age sixty-one, blacksmith, weight one hundred and ninety pounds. General condition good. Characteristic history of stone in the bladder. Operation Dalton, Ga., November, 1891, assisted by Drs. Gordon, Bivings and McAfee, of Dalton, and Warren, of Atlanta. Left lateral operation; difficult on account of depth of perineum. Medium sized phosphatic stone removed entire.

Weight three hundred grains. Recovery excellent. No recurrence. Time of operation, including sounding and dressing, twenty minutes. Enlarged prostate freely incised to make sufficient opening to allow removal of stone.

Case 4. J. D., age twenty-eight, St. Augustine, Fla. Vigorous. History of bladder trouble for over six months. Subjective symptoms characteristic of stone; urine full of pus and mucus. Sounding failed to elicit characteristic click, though slight grating was distinctly felt. Operation Atlanta Medical College, February 13, 1892. Median operation. Large quantity of pus and phosphatic *débris* removed, bladder irrigated. No stone. Perineal drainage for ten days. Bladder irrigated twice daily with hot boric acid solution, or Thiersch's solution. Recovery perfect.

In the cases reported I have stated, in the most concise manner, the histories of the cases and the results of the operation. Case 1 was a forlorn hope. The probability of a good result was so remote that I should not have operated, notwithstanding the importuning of the patient and his friends. In cases 2, 3 and 4 the results were very gratifying indeed. All made excellent recoveries, are still living and the relief afforded by the operations seems to have been complete and permanent.

DISCUSSION ON DR. M'RAE'S PAPER.

Dr. T. M. McIntosh, of Thomasville: I have enjoyed the paper by Dr. McRae very much. My own experience with lithotomy is six cases, all of whom are living except one. Four were children, the youngest of the three being four years old; the others were ten to twelve years of age. One of them I operated on twice. The other cases were twenty-four and sixty years of age. In all of these cases I made a lateral operation. In the patient twenty-four years old I did not make a litholapaxy because it was a large stone. The child on which I operated a second time had a stricture, and after

the operation I advised him to wash his bladder out and dilate the stricture, but in eighteen months the stone returned. I operated again. He followed out my directions as to keeping the stricture dilated and bladder washed out. All of my cases recovered except a man sixty years old. I made the lateral operation on him because of great cystitis. I operated on him the 21st of December last. On the 27th we had the beginning of a severe cold weather, and the patient was doing well until that time, when he was attacked with pneumonia of the left lung and died.

HEADACHE *VS.* GLAUCOMA.

BY W. L. BULLARD, M. D., COLUMBUS, GA

"These medical sciences stand at a stay, and have done so for years," so said Lord Bacon in the sixteenth century, but could he step forward to-day and look over the literature that has been produced and brought forward relative to my theme, I am quite sanguine that this rare philosopher would change his assertion, partly at least, to say the medical science is still a little slow in finding any one remedy as certain relief for all kinds of headache, but it had reached the highest pinnacle of fame as to cause. The wise men tell us of an anæmic, an hyperæmic, or congestive, a nervous or cerebral, the toxic, and the bilious or sick headache, all of which have an abundance of cause. The oculist says that the most of cases are caused from eye-strain, but the gynecologist goes the eye specialist one better, and swears that nearly every case is reflected from uterine or ovarian irritation; while not a few cases are doubtless caused from urethral contraction and syphilitic lesion of the brain or nervous system, so says the genito-urinary surgeon, and the general practitioner knows full well that nine cases out of ten are caused from a torpid liver or a gastro-duodenal catarrh. Now, gentlemen, ignoring every form of which we have spoken, including the headache the most of us will have the morning following the banquet, I will proceed to tell you of the kind of headache I wish to call your attention to, which is a headache, or possibly more often called neuralgia, a pain caused from and is a symptom of a most serious disease of the eye—glaucoma. We have the acute and chronic form,

and in the acute the eyeball becomes red and very much inflamed, with a hard tension of the ball as to touch, a dilated pupil, deep anterior chamber, and a cloudy condition of the aqueous humor and vitreous body, accompanied with nausea and vomiting, at times pronounced as a bilious attack. A patient with this kind of headache, or neuralgia, as it is oftentimes called, suffers at times with the most intense pain extending into the eye from the brow on the nasal side with an œdematous condition of the lid. In the chronic form it sometimes runs its whole course without causing any excessive degree of redness or inflammatory condition of the ball, and the vitreous and aqueous humors are transparent, rendering necessary an ophthalmoscopic examination, with which the pathognomonic excavation of the optic nerve may be readily seen. Yet the patient at times suffers intense pain—supraorbital pain. The storm after a day or so may pass off, but is sure to return at short or longer intervals, and the intraocular tension slowly but surely does its destructive work upon the optic nerve fibers until the "windows of the soul" are forever closed. In true supraorbital neuralgia, or as is designated by the laity "sun pain," the suffering is quite severe; the ball red and the supraorbital notch very sensitive to the touch, but the pain is paroxysmal, beginning in the morning after sunrise, increasing for a few hours, and gradually subsiding in the afternoon before sunset, to begin the next morning, possibly a little later than it did on the preceding day. You will find the vision not impaired, the cornea clear, the pupil normal size and readily responding to the influence of light, which is not the case in the glaucomatous form of headache, and under the treatment of antipyrine, quinine and arsenic the paroxysm is soon checked or broken. While there is some similarity between the two diseases, the differential diagnosis is easily

established, yet I am afraid that most physicians have no idea how many human beings are to-day, from a mistaken diagnosis, groping their way with vision irretrievably lost, and the victim left as in Milton's soliloquy—

> . . . . . But though
> Revisitest not their eyes, that roll in vain
> To find thy piercing ray, and find no dawn,—
> So thick hath quenched their orbs
> Or dim suffusion veiled.

I wish that I was able to portray to your minds the true realities of which I speak. In an effort to do so allow me to quote from that eminent Chicago oculist, Dr. F. C. Hotz,* in a lecture delivered at the Chicago Polyclinic: "Gentlemen: . . It is a fact that the severe neuralgic pain and the violent gastric disturbances induced by acute glaucoma have been taken and treated for 'rheumatic or malarial' neuralgia while the ocular disease has not been recognized until too late. I have seen several cases of this mistake; one was an especially sad case, which impressed me so much that I shall never be able to efface its picture from my memory. Though fifteen years have gone by since I have seen the unfortunate patient, her image is before me now as vivid and distinct as if I had seen her yesterday. Two months before I saw her she had been seized with fever, nausea, frequent vomiting and violent pain extending over the entire right side of the head. Her physician pronounced her trouble to be gastritis, and 'sick headache,' and when the old lady called his attention to the fact that her sight was getting poorer every day (and she could see with her left eye only, for the sight of the right eye had been destroyed by glaucoma ten years), he assuréd her she need not worry about it; that her sight would return as soon as the stomach trouble was cured and the neuralgia in the head relieved. Having implicit con-

* Journal American Medical Association, 1892.

fidence in her physician, she believed his word, and though her sight had soon vanished completely, she waited hopefully for the day when the darkness would be lifted again from her eye, and patiently endured the constant most violent headache, which robbed her of rest and sleep by day and night. For two weary months this poor woman suffered and hoped; but then her patience was exhausted, and much against the will of her physician she went to consult an oculist. Poor woman! it was too late. The continued high tension of glaucoma had done its deadly work upon the optic nerve too truly, and although the iridectomy effectually reduced the intraocular tension, and promptly relieved the patient of the terrible headache, so that after the operation she could enjoy a good, quiet sleep—for the first time in eight weeks—the woman has never seen a ray of light since the awful result of a mistaken diagnosis."

Now, gentlemen, I venture the assertion that there is not an oculist of any experience, so to speak, who has not seen cases similar to the one just quoted, and I will quote from a letter bearing on this subject received since I commenced to write this paper. It is by Mr. J. M. Floyd, of Fayetteville, Ala., who says that: "I write you concerning my wife, who has been blind for two years. She is fifty-seven years old, in very good health. About three years ago she was taken with neuralgia in the head, which settled in her eyes; the misery was very intense for some months, after which she became nearly blind. She lost all sight about six months afterwards. I took her to an oculist, who pronounced it glaucoma, and told her that he could do her no good." Now, I don't know the cause of the delay in this case, but am sanguine to say, had there not been a mistaken diagnosis the delay would not have happened, and to-day there would have been one less blind person groping about in the long dark night. I ask why this mistaken diagnosis is? Is it from the fact that we

become careless in making our examination, and take too much as granted in what a patient tells us? In truth, do we sometimes let the patient make the diagnosis? But who is responsible? The diagnosis correctly made, the only remedy is the surgeon's knife, and the sooner the iridectomy is done the greater the chances for the restoration of vision. No known medicinal treatment, including Dr. Hammond's cerebrine and medulline, can permanently stay the disease. Physostigma and pilocarpine will check the destructive ravages for a time, giving the afflicted some chance until the surgeon can be seen. Preparation of belladonna and erythroxylon coco—which includes cocaine—should never under any circumstances be used in glaucomatous headache, and permanent good not be expected from any treatment save an iridectomy, as advised by Dr. Graefe some years ago, and I must add, it is one of the grandest triumphs of modern surgery.

TWO RARE CASES IN PRACTICE.

BY P. L. HILLSMAN, M. D., ALBANY, GA.

OCCLUSION OF THE OS UTERI COMPLICATING LABOR AT TERM.

Case 1. Mrs. H., age twenty-nine, robust, well-developed, married nine years. Began menstruating in her fourteenth year, and was quite regular until she conceived. Six months prior to conception had some form of uterine disorder, and was under the care of a physician until a short time before she missed her menses.

Gestation progressed without any unusual symptoms to full term. Labor pains commenced about 1 o'clock A. M., and continued until 7 A. M., when I was called to attend her. On arrival found pains frequent and rather of an expulsive character. Digital exploration revealed uterus well descended into pelvic canal, with the ovoid form of vertex presentation, but no os could be found.

After a more minute examination I detected a point somewhat depressed and more attenuated than the surrounding tissue, and being satisfied that it was the os occluded by adhesive inflammation, I proceeded to operate as follows:

An ordinary uterine sound was forced through the most depressed point; this was followed by uterine dilator, and parts expanded until the index finger could pass. Full dilatation was now gradually accomplished with the fingers, aided by moderate chloroform narcosis, and labor terminated without further assistance at 5 o'clock P. M.

Child was still born, attributable to tedious and prolonged labor. Patient made an uninterrupted recovery, and has since been perfectly regular in her menses.

Remarks. History of this case goes to show that at the time of conception she had endocervicitis, which resulted in adhesion of the parts—there being no menstrual flow to mechanically expand the os.

ABDOMINAL PREGNANCY.

Case 2. M. J., colored, aged forty-two, married; has given birth to five children; last child four years ago. Consulted me April 1, 1892, with history as follows:

Fifteen months ago missed her menses, symptoms of pregnancy followed. She also thought that she experienced quickening, and made ready for the event of parturition. Having gone several months over her time without any symptoms of labor she consulted a physician, who informed her that she had uterine fibroid, and that she would in all probability get relief after her courses left her. She was comparatively well at the time, and continued her vocation (that of an ordinary hand in the field) until about one month before consulting me, when, owing to feeble health, she was compelled to give up her work.

Subject, at the time of her visit, was emaciated, complained of gastric disturbance, said that she felt as if her stomach was not large enough to hold sufficient food to satisfy her hunger, and vomiting ensued if a moderate meal was taken. Abdomen enlarged—presenting the appearance of pregnancy at term.

On examination I found the uterus anteverted, and with difficulty passed a curved sound three and one-half inches. The tumor gave some evidence of semifluctuation.

Case was diagnosed as ovarian cyst, possibly malignant in character, as patient had lost flesh rapidly, and the gastric disorder led me to suspect similar trouble in stomach.

Operation urged, but owing to her husband being actively engaged in crop it was deferred for the time. The patient was placed on tonic course, and nutritious diet ordered in small quantities, and often repeated.

July 1st patient returned and insisted on the operation; stated that she had gained some strength shortly after first visit; had her menses to come on twice, and was hopeful of recovery, but for the past two weeks had begun to fail again, and vomit her food.

Operation July 4, 1892. Under strict antisepsis abdominal incision was made from the umbilicus down near to symphysis; walls very attenuated and completely adherent to sac. After freeing adhesion on left side about one inch from median line, peculiar pouch was discovered, which was at first very puzzling. On further dissection, however, it was found to be a reflection or folding of the sac on itself. This was caused by a partial absorption of the liquid contents of the sack, and the resilient abdominal muscles caused an overlapping of the flaccid walls. The sac having been freed as far as the incision would allow a trocar was introduced and the liquid contents withdrawn. Only about one pint of thick caseous matter passed, the appearance of which rather strengthened my fear of malignancy.

Finding it impossible to bring the mass through this opening, the incision was enlarged through and above the umbilicus about four inches. Further effort was now made to free the sac from its intimate adhesion to the adjoining viscera, which being found impracticable was abandoned. The sac was now incised and (to my great relief) was found to contain a well preserved child weighing seven pounds. This, with its shriveled placenta, was readily extracted without any hemorrhage. The freed portion of the sac was removed and edges stitched to abdominal walls, drainage tube placed in abdominal cavity at lower point of incision and sac loosely packed with iodoform gauze.

Dressing was completed with thick wadding of iodoform cotton covered by gauze and bandage.

Patient rallied well from the operation, and began to cry piteously for food. She was allowed one teaspoonful of Wyeth's Meat Juice every four hours, and small quantities of crushed ice.

July 5th, temperature 99½°. Slept well during night from hypodermic morphia. Still clamoring for solid food.

July 6th, temperature 100½°. Allowed milk with lime water in small quantities, and egg albumen water.

July 7th, 10 o'clock A. M., found patient in collapsed state, with great pain in bowels; abdomen much distended with flatus, more particularly over region of stomach. Breath exhaled an odor of decayed eggs. On questioning the attendant, her husband, he acknowledged that he had given her three eggs for supper on previous night, and other things in proportion. He said he did not think she would ever get up without getting more to eat. Stomach tube was inserted and about half a gallon of offensive matter removed and organ cleansed with warm water. Dressing was removed and wound found in good condition; very little discharge having taken place since operation.

Patient did not rally from the state of collapse, and died at 6 o'clock P. M. Her body was removed same night to the country, and consequently no autopsy was made.

Remarks. The progress of this case up to third day led me to hope for a favorable result, and the unhappy termination should be justly attributed to the pain and distress incident to the heavy meal of eggs, etc., taken for supper.

The condition of the wound would exclude septic poison as a possible cause of death.

PUERPERAL ECLAMPSIA, WITH SPECIAL REFERENCE TO ITS CAUSE AND TREATMENT.

BY A. C. DAVIDSON, M. D., SHARON, GA.

Puerperal eclampsia is that form of eclampsia or convulsive seizure which occurs in the puerperal subject during the later months of pregnancy, during labor, or in the puerperium, and is always accompanied by more or less albuminuria.

Its frequency is said to be about one in five hundred labors. I am inclined to believe, however, that it occurs much more frequently. I have known eight cases to occur in six hundred labors.

The aggregation of reports by our best obstetrical authorities attest that about 22 per cent. of all cases occur during the latter months of pregnancy; about 53 per cent. during labor, and the rest—about 25 per cent.—during the first two days after the completion of labor.

Of the six genuine cases which I have seen and treated, one occurred during the eighth month of gestation, two during the month of labor, and three after the completion of labor; one during the first and two during the second day of the puerperium.

Two other cases of convulsions, occurring during the first two days after the completion of labor, have been seen and treated by the writer, but both were excluded, nosologically, because no albumin could be found in their urine by the most approved chemical test.

Our knowledge of the nature and pathology of puerpe-

ral eclampsia is yet imperfect, and quite a number of ingenious theories have been proposed by the obstetrical writers attempting to explain the various phenomena present.

I will not undertake, in this communication, to review every one of these various theories. There is one, however, which was proposed by Traube as an explanation of the cause of the convulsive seizures, which was indorsed and adopted by Rosenstein and other continental writers, and which has been accepted by quite a number of American obstetricians and obstetrical teachers, and is known as the Traube-Rosenstein theory, which I consider erroneous, viz.: That the convulsive seizures are due to acute anæmia of the brain, brought about by mechanical compression of its blood vessels, and that this compression is due to watery effusion into the brain, and that this watery effusion is the result of a hyper-hydræmic state of the blood, together with an exalted arterial pressure due to hypertrophy of the left heart.

I consider this theory incorrect because: 1st, I do not believe that anæmia of the brain can be produced by cerebral œdema. It is clear, to my mind, that transudation must cease when equilibrium between intra and extra-vascular pressure has been reached. The pressure from without the arterioles being exactly antagonized by the pressure from within, it is impossible that cerebral œdema could produce cerebral anæmia. 2d. Again, arguing *a posteriori*, the fact that bloodletting does, in a large per cent. of cases, relieve promptly the convulsive seizures is evidence sufficient to prove this hypothesis incorrect, because bloodletting tends always to augment and intensify both hydræmia and anæmia.

Now, if any medical writer or teacher can show how disease of any kind can be relieved or cured by augmenting or intensifying the cause that produced it, then I am willing to contribute at least a modicum of credence to a

theory that attempts to prove that all diseases are amenable to, and are curable by, administering the thing that would produce it.

It is a well known fact that hydræmia is a physiological condition during the period of gestation in the human female, and, so far as we know, is not physiological in any other than the human female.

This is a wise provision of the all-wise Creator.

In all quadrupeds, during the period of gestation, the gravid womb, by its very gravidity, and by the natural law of gravity, is pulled away from the main organs of elimination and excretion, and does not in any way interfere with their full and free action.

Not so with the pregnant human female; but, on the contrary, on account of her erect carriage, and by the same law of gravity, the womb, as it increases in size and weight, not only makes pressure downward toward the pelvic cavity, thus interfering considerably with the physiological action of the organs therein contained, but makes pressure, more or less, in every direction, up to a line drawn perpendicularly to the general contour of the trunk, a few centimeters above the umbilicus, and, therefore, interferes more or less with the full and free action of any organ, upon which, or against which, it may impinge.

It is in this manner that the ureters are, in some cases, occluded to such a degree that water, and such substances as are perfectly soluble, and are completely dissolved in it, alone, can pass through them, leaving behind the grosser products of tissue metamorphosis.

The organs of excretion and elimination being thus interfered with in the performance of their natural and proper functions, it is but philosophical to expect that many excrementitious substances are retained in the system.

Some of these excrementitious substances which are retained in the blood undergo certain chemical changes, and

that which was once a harmless substance becomes an irritant poison. How wise then it is that these irritating poisons should be, by means of hydræmia, diluted to the fullest capacity of the system. Hence hydræmia is physiological in the pregnant (erect) human female. This brings us to the consideration of what we believe to be the real cause of puerperal eclampsia—acute cerebral and spinal hyperæmia, brought about by acute cerebral and spinal irritation.

Our old-time pathologists taught us that wherever there is an irritation there is also a flow. This old-time maxim has never yet been disproved.

The retention and accumulation of excrementitious substances, such as urinary salts, the urea and other products of tissue metamorphosis in the blood by interrupted renal function, if they undergo no chemical change, are, of themselves, sufficient to produce cerebral and spinal irritation to a marked degree.

The flow of blood in unusual quantities to a point of irritation is always intended by nature to be remedial; but in this instance the source of irritation is borne along with and in the current of the remedial agent, and is conveyed to and deposited at the point or points of special irritation, thus tending to excite still greater irritation, and in consequence thereof, a still greater flow.

This morbid process continues to go on, unless interrupted by suitable measures, until the explosion comes.

But nature is conservative, and its physiological mechanism is founded in wisdom. That irritant which it cannot remove by rapid elimination, nor weaken by great dilution, it undertakes to neutralize by a suitable antidote.

That morbid condition known as uræmia is always present in true puerperal eclampsia.

Wherever there is uræmia there is albuminuria. Wher-

ever there is puerperal eclampsia there is albuminuria. Wherever there is puerperal eclampsia there is uræmia.

The converse of these propositions is not always true. I have seen cases of uræmia where there were no convulsions, but there were albuminuria and coma. I have seen cases of albuminuria without coma or convulsions. I have seen cases of albuminuria without uræmia, coma or convulsions.

While albuminuria exists in quite a number of pregnant females who go on to full term, and who complete parturition and pass through the puerperium without any symptoms of uræmia or convulsions or coma, it does not disprove the fact that where puerperal convulsions occur albuminuria is always present.

Indeed, I believe that albuminuria is present in all cases that result in eclampsia, not as a cause or as a result, but as a remedial agent. Albumin is a neutralizer of a number of irritant poisons; therefore when elimination and dilution is insufficient to remove or render impotent the source of irritation, albumin is produced in nature's wonderful laboratory in extra physiological quantities as nature's natural antidote for the poisonous irritant.

Hyperalbuminosis exists not only in puerperal eclampsia, but in any morbid condition which is the direct result of interrupted renal function, whether the interruption is due to organic disease of the kidneys or to other causes. Hence we find it in acute and chronic desquamative nephritis, because here we have the blocking up of the tubes by desquamation of epithelial gland cells, the obstruction of renal circulation, congestion of the kidneys, etc.

These conditions result, sooner or later, in uræmia or ammoniæmia, and as we have seen, nature resorts to hyperalbuminosis both as an emollient to the inflamed and abraded kidneys, and as a natural antidote to the toxæmia present.

Hence, we see why albuminosis and albuminuria exist

in quite a number of pregnant females who go on to full term and complete the puerperium safely. Here we have an apt illustration of the *modus operandi* of *vis medicatrix naturæ.*

With regard to the symptoms of puerperal eclampsia, it is needless to say much. The very name indicates the symptoms, and they are nearly all referable to the nervous system.

Headache, stupor, nausea, vomiting, oppression of breathing, irregular action of the heart, impairment of vision and coma, are the usual symptoms that immediately precede, coexist with, and immediately follow eclamptic seizures.

Convulsions are, as a matter of course, the most common and the most severe symptom. These resemble very closely the convulsions of epilepsy, and continue from a few seconds to several minutes. In one very severe case, in which the woman was having convulsions for more than thirty-six hours, I saw one convulsion continue longer than sixteen minutes. Tarnier records a case that continued twenty-four minutes by his watch.

I have seen one case in which amaurosis preceded for several days, and followed, and continued ten days after the complete cessation of the eclamptic seizures.

In another case, which I reported to this Association in 1888, amaurosis continued nearly two months, after the convulsions and other symptoms had entirely disappeared.

The last case seen by the writer was followed by acute mania, which continued two days. The patient was a powerfully built woman, and was possessed of wonderful physical strength. It took two, and sometimes three, strong men to control her. Her mania resembled *mania a potu,* and could readily have been mistaken for delirium tremens of the most violent type.

It has been my duty and pleasure to see and treat eight

cases of puerperal eclampsia, six of which were genuine and two were spurious, as stated in the beginning of this paper, all of which ended in recovery.

Four of these cases I reported in full in my communication to this body in 1888. In that report I gave treatment in full without comment. By reference to that report it will be seen that in two cases bloodletting was resorted to, together with other means, in one of which it alone was sufficient to control the convulsions. In the other it was not. I refer to this because bloodletting is a powerful means of averting immediate danger in puerperal convulsions, and is entirely rational and is always indicated, but need never be resorted to. We have a remedy that will always produce the same effect without the loss of a single drop of the life-giving fluid.

The bromides, chloral, chloroform, opium, derivatives and other sedatives, are useful in allaying nervous irritability and excitability, and have their advocates, who earnestly urge and warmly praise their use in the treatment of eclampsia. Thus, Prof. Loomis highly recommends morphine given hypodermically, and states that when used in this way its almost uniform effect is, first, to arrest muscular spasms; secondly, to establish profuse diaphoresis, and, thirdly, to facilitate the action of cathartics and diuretics.

The first of these propositions is eminently true; but so far as my observation extends, morphine, given in any way, whether by the mouth, or by hypodermic injection, or by vaginal or rectal suppository, tends, always to retard even normal secretion and to check elimination of all kinds, especially elimination of excrementitious substances from the blood by way of the kidneys.

Under the influence of morphine the intestines are rendered insensible to the natural stimulus of their contents; the liver fails to perform its normal function; the urine is

greatly lessened, if not entirely arrested, even if the kidneys are altogether healthy; secretion and exhalation is checked in every portion of the mucous membrane; the mouth and throat are dry, and thirst, in many instances, is almost intolerable.

How morphine can facilitate the action of cathartics and diuretics is an unsolved mystery to this writer. That morphine does facilitate in anyway the action of cathartics and diuretics is altogether untrue and absolutely impossible.

Nevertheless, morphine is indicated in the treatment of puerperal eclampsia from the very fact that it is a powerful myo-paralytic, and possesses power to arrest muscular spasm. Chloroform possesses the same power, and is far more prompt in its action.

These two powerful agents, however, meet only one indication. They can only suspend temporarily the resulting eclamptic seizures, but have no power to drive out from the system the cause that produces the seizures. To rely on either alone, or upon both together, is unphilosophical, and would jeopardize both the welfare of the patient and the reputation of her physician.

In the treatment of puerperal eclampsia there are two indications to be met: The arrest and control of the convulsive seizures; and at the same time to remove promptly the immediate and to facilitate and hasten the elimination of the remote cause or causes of these fearful seizures.

To meet both these indications there is no one remedy in our entire *armamentarium medicorum* that will in any way equal veratrum viride.

In it we have an agent that arrests promptly and controls effectually the turbulent spasms, at the same time facilitates and hastens the elimination of the poisons that first give rise to the immediate cause of these violent manifestations.

It effects the first of these indications by a bloodless

depletion, thus removing the immediate cause, which, as we have shown, is cerebral and spinal hyperæmia.

It facilitates and hastens the elimination of the irritant poisons producing the hyperæmia by its remedial action upon the skin, the kidneys, the stomach, the liver and the bowels, and by its salutary control over the action of the heart.

Under its influence the heart assumes its regular and normal, and sometimes subnormal, action. The skin opens up all its pores; diaphoresis is fully established; vomiting is produced, and continues sometimes for the space of an hour or more, with short intermissions of rest; urine is voided, sometimes copiously; and the liver pours out bile in extraphysiological quantities, and continues to pour it out—we do not know how long—but so long as the vomiting continues.

This last proposition is fully attested by the fact that almost pure bile is found in considerable quantities in the matter vomited from the stomach and in that discharged from the bowels. This I have verified by ocular observation and by approved chemical test.

With this remedy alone I have been able to control and cure at least one case of post-partum puerperal eclampsia. This was fifteen years ago last November. The case was that of a slenderly built, poorly nourished white woman, who was confined with her first child the 23d of the said month. She was attended by a retired but very intelligent physician in the absence of the writer. Labor was uncomplicated and comparatively easy. Secretions and excretions apparently normal. Upon the forenoon of the 25th she was attacked by a severe chill, which was followed by a very high fever in the afternoon. It was nearly 2 o'clock P. M. of the same day when she was attacked by the first convulsion. I arrived at near 3 o'clock, at which time she had had several quite severe seizures.

Her face was very much flushed, breathing was hurried and was somewhat labored; pulse 142, full and strong; temperature 150°; respiration 42 to 50. She was semi-comatose and hard to arouse.

I gave her ten drops of Norwood's tincture of veratrum viride every twenty minutes until I had given four doses.

Soon after she had taken the second dose she had a mild convulsion. A little while after she had taken the fourth dose she vomited freely; her bowels moved, and the physiological effects of the drug prevailed to its fullest extent.

In a little more than one hour from the time she took the first dose her pulse had fallen from 142 to 56 per minute, and she was bathed in a profuse, almost colliquative, perspiration, with a subnormal temperature.

She had no more convulsions and no more fever until the morning of the 27th, when the fever returned again and she was again seized with convulsions.

I renewed the treatment by giving at once twenty drops of veratrum viride, which promptly arrested the spasms, and she had no more. I heard no more from the patient in several days. When I did, I was informed that she had gotten along very well, and was able to be up a little.

No other medicine was used in this case until the second series of convulsions had subsided. I reported the above case, the week following, to my friend, the late Dr. H. F. Campbell, of Augusta. He was astonished at my temerity, as he called it, and asserted that he would have suffered the loss of his right arm rather than to have given such treatment to one of his patients, but admitted that the end seemed to warrant the means.

As demonstrative of the great value of veratrum in the treatment of puerperal eclampsia, I will here narrate, briefly, the history of a typical case to which I was called as consultant in 1890.

Mrs. C., about eighteen years of age, a primipara about

completing the eighth month of gestation, awoke on the morning of the 30th of April, 1890, with an excruciating headache. While walking across her room about eight o'clock that morning, she was seized with a convulsion and fell to the floor. From that time onward for about sixteen hours she was utterly unconscious, and had during that period of time more than thirty convulsions of the severest type. I was called to and reached her bedside just before midnight.

Drs. C. S. Kendrick and L. R. Brown, two intelligent and accomplished physicians, had been constantly with her all day, and had given her the full benefit of their knowledge and skill as obtained from the standards, and from their own experience in obstetrical practice; and still the convulsions came on with aggravating uniformity.

I found the woman in deep coma. Her eyes were wide open, and her pupils almost insensible to lamplight. Her face was much bloated and there was considerable œdema involving the whole of her lower limbs and lower extremities. Her bowels had not moved during the day nor had she voided her urine. Considerable fever existed, but I did not take her temperature. Her pulse was 150, weak and small. Her respiration, which was of the Cheyne-Stokes variety, was irregular, loudly stertorous, and varying from 46 to 56 per minute.

I proposed the hypodermic use of veratrum. This proposition was readily acceded to by both physicians, they really considering the case utterly hopeless. While I was preparing the medicine to be injected she was seized by a fearful convulsion which continued fully six minutes. As soon as the muscular spasms had ceased, I injected into her right arm, near the insertion of the deltoid, the following:

Norwood's tinc. v. viride	gtts.	16
Pure glycerine	"	16
Distilled water	"	20

For thirty minutes thereafter there was no appreciable effect. At the end of forty minutes her pulse was reduced to 120, and was stronger and fuller. She began to vomit at the end of fifty minutes, and continued to vomit, off and on, for an hour and a half, at which time her pulse rate had been reduced to 36 per minute, and the pulse was full and strong. She was sweating profusely. Her bowels had moved several times, and her bladder had emptied itself of what appeared to be a considerable quantity of urine.

She had no more convulsions; was entirely rational in less than three hours from the time the injection was made, and gave birth, the following afternoon, to what appeared to be a healthy, but not fully developed, male child, with comparative ease, and with perfect safety, to both herself and her offspring.

Some observers have claimed that, in some instances, veratrum exerts no influence whatever, even after immense doses of the drug. One observer* states that "it was used in one post-partum case to the amount of one ounce of Norwood's tincture in three hours, but without the slightest effect."

In such an instance, one of two things is absolutely certain; either the preparation used was spurious, or the stomach was in such a condition that the remedy used could not be absorbed by it. Such observations by no means prove the inefficacy of a given remedy. In hæmaturial or hemorrhagic form of malarial fever, it has been observed that quinine failed to produce any effect whatever until it was given hypodermically. The inference is plain.

Apomorphia has been suggested as a valuable remedy in the treatment of puerperal eclampsia, because of its power to promptly evacuate the stomach of its contents.

Dr. Eggleston, Archives of Gynæcology, Obstetrics and Pædiatrics, May, 1887.

With its use I have no experience. I have seen prompt emesis produced by ipecacuanha utterly fail to affect, in any appreciable way, the progress of the convulsions.

Pilocarpine has its advocates. Among them are those who stand eminent in the ranks of our profession. My experience with it has not been satisfactory.

Among the many medicines which have, at different times, been suggested on account of their efficacy and promptness, chloral stands prominently with the best, because of its power to produce anæsthesia, paralysis and loss of reflex irritability.

My old friend and preceptor, the late Dr. Joseph A. Eve, of Augusta, who stood right in the very front ranks of American obstetricians, thought well of it, and recommended it highly as being one of the most powerful means at our hands for controlling the spasmodic seizures in puerperal eclampsia.

My experience with it has been quite satisfactory, and I esteem it second only to that which I consider the best of all remedies in the treatment of this fearful malady, viz.: Norwood's tincture of veratrum viride.

As I have before stated, in the treatment of this disease there are two indications to be met. The arrest and control of the eclamptic seizures; and, at the same time, to remove promptly the immediate, and to facilitate and hasten the elimination of the remote, cause or causes of these seizures.

I have also stated that we have a remedy in veratrum viride that does both.

Nevertheless, lest in any way this one remedy should possibly be insufficient to effect fully the second of these indications, it is my plan to give calomel as soon as my patient can be made to take it. I prefer calomel to any other cathartic because of its decided action upon all the glands of the system, arousing and exciting them, and

urging them on to a full performance of their every function. It is easily given by floating it on water in a spoon. It is best to give in this way eight or ten grains every two hours until it moves freely. If this should not occur in four or five hours after the third dose has been given, then a dose of one or two drops of croton oil, mixed with twenty grains of common cooking soda, and a tablespoonful of sweet milk, should be given.

Under the influence of calomel I have known free diuresis as well as free catharsis to result.

I do not believe that it is necessary to bring about premature labor in order to save the life of a patient who is threatened with eclampsia. I do not believe it is necessary to bring about premature delivery to save the life of a woman who is having convulsions. This I have demonstrated in two cases; one a primipara in the eighth month of gestation, and the other in the ninth month of gestation with her seventh child. Both these cases were typical and exceedingly severe. In both the convulsions were controlled and the women cured, and their offspring saved.

I have recently brought a woman safely through her period of gestation with her eighth child who had had severe convulsions with, and had lost both her sixth and her seventh infant by the artificial induction of premature delivery.

PARTIAL TENOTOMY A RADICAL CURE FOR HETEROPHORALGIA.

BY C. H. PEETE, M. D., MACON, GA.

This term, heterophoralgia, being comparatively a new one, needs some explanation. To those who have not made themselves acquainted with the use of it, I will say that it is a name given by Dr. G. H. Price, of Nashville, Tennessee, to a chain of symptoms caused by the expenditure of much nerve force, in order to maintain perfect binocular single vision, where there is a tendency of the visual lines to deviate from parallelism. These symptoms, such as dull, heavy headaches, especially those through the temples and forehead, a blurring of the letters after reading a short while, and what is commonly known as sick headaches, are all representative of heterophoralgia, and yet are frequently caused by an error of refraction, which error should be properly corrected by glasses. After correcting the existing errors of refraction, we should test the muscles to ascertain if the opposing ones are of equal strength. If not, we measure the amount of difference in degrees. Should that deviation be only of such an amount as can be corrected by prisms we do so; if it cannot be corrected by the use of prisms or decentering the lens, we resort to our radical means of partial tenotomy.

This tendency to deviation may be in any direction. We have had names given it for the deviation in different directions, which express them exactly and nicely.

In order to discuss the subject intelligently, I must go a little farther in the examination of the cause which I claim

calls for the operation. We know that where there is an actual turning of one eye in, out, up or down, that the deviation of the visual line from parallelism is so great that the nerve force allotted the muscles attached to the ball is not sufficient to maintain binocular single vision, so that, not being able to maintain the single vision, the impression made on one eye is not noticed; consequently, the unbalanced eye, finding itself unable to maintain its position, naturally turns or yields to the stronger of the four recti muscles, which carries it from parallelism of the visual lines in proportion to the superiority in strength over its opponent.

So this is where we have the condition called heterophoria, only that the deviation is of such an amount that, with a considerable amount of strain, we can maintain single vision.

As it is with other muscles of the body, so it is with the recti muscles of the eye. Suppose two men of unequal strength are pulling on a beam which is fastened at its center; we can readily see that the one of inferior strength will sooner become exhausted, and it is then with considerable effort that he can maintain his position. We can also see that at the end of a given time the weaker man will be compelled to rest, or he will fail to do his work. Now then we know that if this is the case with men of unequal strength, it will also apply to muscles of unequal strength.

When this heterophoric condition exists, we know that there is a deviation of visual lines from parallelism, and that in order to bring them to parallelism there must be expended an additional amount of nerve force by the weaker muscle. This condition being constant, unless relief comes to the overtaxed muscle, there will be as a result a train of symptoms named by Dr. Price as heterophoralgia. Knowing the laws of refraction, we know that a condition of this kind can, to a certain degree, be corrected by the

use of proper lenses; beyond that degree, I claim that the only radical cure is partial tenotomy.

The two muscles being of unequal strength, it is our business to equalize them. There are different theories as to the cause of this deviation, one being that one of the muscles is overdeveloped, another being that one of the muscles is under or not sufficiently developed; the third theory is that the maculæ are congenitally misplaced. As far as the treatment is concerned, they all amount to one and the same thing. The visual lines must be made parallel. In performing this little operation we give relief to many patients who have been sufferers for years.

While the operation is being done by a great many, there are yet some of our leading ophthalmologists who do not practice it. It may be said that some object to it merely from a point of prejudice, not having tried the operation or seen its results, while others are conscientious in their views and belief that relief can be gotten by the use of prisms or decentering lenses.

While, as I have said before, that is true of some, it is not true of all, and is not a radical cure of the trouble, some symptoms arising from the unbalanced muscles. In our treatment of cases of any kind we must remove the cause to relieve the symptoms or effects; and where this difference in strength of the muscles exists, we must first remove the cause by equalizing them, and how can it be done permanently without an operation? We find hypermetropic patients with small amount of exophoria, who suffer a great deal in doing near work. As long as they abstain from it they do not complain; but after a short time at this work, they will tell you of all the symptoms we know as heterophoralgia.

In converging for the near point the internal recti are brought into play, and they, being the weaker muscles, it

is with some effort they are able to maintain the position required for binocular single vision.

As this reserve force is brought out and used up to assist the internal recti in converging, so in proportion the disagreeable symptoms are increased. Heretofore, those who have suffered from this trouble and were not relieved by properly adjusted glasses, have been compelled to abandon, in a great measure, their near work, in order to free themselves of this terrible suffering. The fact is that it is only within the last few years that we have been able to find the cause of them. Since the introduction of the Maddox Rod and double prism tests, we have been able to diagnose these deviations beyond a doubt.

Dr. Savage, in an article published in the *Ophthalmic Record* of January, 1892, gives us a dividing line between operative and non-operative cases, and to this article I refer you for that consideration. Whenever I find that placing a plain red glass before one eye causes diplopia for distance, I operate at once, dividing just enough of the fibers of the stronger muscle to equalize the strength of it with that of its opponent, making the visual lines as near parallel as possible, then correct the remaining amount with glasses.

In my practice, I find that the majority of cases suffering from heterophoralgia are those of young adult life, or that they have been sufferers since that time. I account for that by the fact that we know, in order to cause it, the patient must concentrate his vision on an object, and the length of time of this concentration governs the intensity of suffering.

In children, the vision is never fixed on any point for a length of time, consequently these symptoms are not brought on. In young adults who have acquired the habit of hard study and constant close work, it occurs frequently, and you will find in most cases that it commenced with the time of their beginning the work or in a short time after.

These muscle tests should be applied to every case that comes to us for refraction work, and when we find these deviations existing, we should resort to the radical relief, partial tenotomy.

The operation is too well known to need any comment.

"SHOTGUN" PRESCRIPTIONS.

BY C. C. HART, M. D., CROSS KEYS, GA.

My object in presenting this paper is to provoke discussion, by asking is it right to make what is known in medical parlance as "shotgun" prescriptions?

I take the position that it is not right.

First, because it increases the difficulty of prescribing and makes the therapeutic action of medicines more uncertain; consequently less safe to the patient.

Secondly, because we should strive to make medicine an exact science, which we can never hope to do without exact knowledge, and how are we to know what effect a certain medicine has when it is combined with several other medicines, some of them, perhaps, of antagonistic nature? Suppose six men shoot at a bird at the same time and kill it, who could tell which killed it?

There is no disputing the fact that "shotgun" prescriptions sometimes act well, but would they not do better if some of the "shot" were left out?

TRAUMATIC DIFFUSE ANEURISM OF THE ANTERIOR TIBIAL ARTERY—LIGATION OF THE FEMORAL.

BY F. R. CALHOUN, CARTERSVILLE, GA.

Mr. L. W. J., a farmer, twenty-four years of age, while cutting green corn for his stock in September, 1891, carelessly let his knife slip and received a punctured wound on the anterior portion of his leg about the middle third. The point of the knife penetrated the anterior tibial artery from which there was only a "spurt or two of blood," before he arrested it by tying his handkerchief tightly around the leg. That night he suffered, as he expressed it, "almost death," due no doubt to the unyielding tissues and pressure upon the nerve by extravasated blood. Becoming somewhat alarmed, and finding little or no relief, he sent on the third day for his family physician who responded at once. The doctor regarded it as rather a trivial affair, applied a simple dressing, administered a placebo, and the wound soon healed externally. Continuing to suffer pain, though not so intense as it was during the first few days, he called at my office about one month later to consult me. On examination I found a pulsating tumor about two and a half inches long by one in width, and on a line with the anterior tibial artery. The pulsations were synchronous with the heart's action. The peculiar aneurismal bruit was also quite perceptible. My diagnosis of course was complete. I made known to patient the nature of his trouble and the probability of having to operate on him later, but would not resort to the

knife unless more conservative measures failed. I placed a cork pad over the tumor which was held in position by a roller bandage, not too tight to obstruct, but sufficiently so to moderate, the flow of blood. This treatment was kept up for some weeks, removing the bandage from time to time when the limb became numb or painful, and reapplying after suitable rest. At the expiration of two weeks I saw patient again and thought progress had been made, for the tumor was not so large, was more consolidated, and pulsation less perceptible. Had patient maintained absolute rest longer there might have been possibly a complete cure, but he took too much exercise every day, and when I heard from him again the tumor had enlarged. Esmarch's bandage and flexion were tried later on in succession, but without favorable results. I did not see patient again until the 27th day of December following, when I was summoned to his home, a long distance in the country. I was rather surprised to find him depressed in spirits, losing flesh, appetite gone, and the leg very much swollen and discolored. At one point the sac was so attenuated as to threaten rupture at any moment. Certainly he was in a very precarious condition, and it would have been unwise to delay operating any longer. Indeed, had I been apprised of his true condition it would have been done earlier. Applying at once a roller bandage as a protection against rupture, and enjoining perfect quiet, I returned home to make preparations for operating the following day. Calling to my assistance Drs. Claude White and A. T. Calhoun, who rendered me valuable service, we removed patient from the bed to a table and after placing him fully under the influence of chloroform applied an Esmarch's bandage and tube, the latter being made fast, high up the thigh. We then laid open the sac, which was some seven inches in length by four in width and filled with clotted blood. Finding it impracticable to ligate the

artery on its cardiac side, we immediately proceeded to ligate the femoral in its middle third, and used a carbolized catgut for ligature. Wounds were dressed antiseptically, the leg wrapped in flannel and patient placed in bed. He was put on a tonic course of treatment with nourishing diet, and in about six weeks he was up, the wounds having healed by granulation. Repairment of nerve and muscular power was slow, as it was four or five months before he could dispense with first a crutch and then a stick.

In reviewing the history of this case, the question arises wherein could you better your treatment if called to a similar case with similar surroundings. I would operate at once, and yet it would seem to be in the face of all teachings. To keep up pressure on an artery so deeply seated is both painful to the patient and very uncertain in its results, as are all substitutes for the ligature. By operating early the patient is spared much suffering, anxiety, danger and loss of time. Thanks to antiseptic surgery, the mortality attending this hitherto dangerous operation has been greatly lessened.

A CASE OF "MULTIPLE NEURITIS" (ALCOHOLIC).

BY MARK H. O'DANIEL, M. D., MACON, GA.

The words Multiple Neuritis at once convey the idea of what the disease is, meaning, of course, many nerves affected. It is not a common disease among even neurologists, yet we could not call it rare in the full meaning of the term.

There was a very graphic description of the case by Dr. T. M. Holmes, of Rome, Ga., deceased, which appeared in the Transactions of the Medical Association of Georgia, and also in *The Atlanta Medical and Surgical Journal* in the year 1888, page 45. Dr. Holmes goes on to state that this case resulted from cold and exposure, the party being a sailor and running to and fro on the river near Rome. Cold is a common cause of neuritis of any character. Our rheumatisms, neuralgias and sciaticas, facial troubles, etc., all frequently result from exposure, as we see it, to cold.

The man who remains in a hot room where temperature is high, if of a neurotic temperament, going suddenly into the cold air or wind, is likely to have a facial neuralgia or a neuritis beginning or resulting from, of course, irritation of the nerves of the face. Why not this be true as well as divers other irritations and inflammations we see and have. Why not the nerves become irritated and inflamed as well as the lungs or bronchial apparatus.

Dr. Holmes goes on to say in his treatment that he administered whisky and opiates. Perhaps the hair of the dog, as the old adage goes, is good for the bite, but I cannot

see how the causative agents could be successfully used as curative remedies of any disease in this particular class of troubles.

But, gentlemen, not to take up your time or bore you with authorities and histories of other cases laying down the various and many causes of Multiple Neuritis, I shall proceed at once to give you, in a concise way, my own observation and experience with this case, believing that you can gather all the additional facts of other similar cases from your text-books. So I shall proceed, as I gave notice I would report a case of simple and typical Multiple Neuritis (Alcoholic). This, gentlemen, excludes all the causes, such as cold, morphinomania, metallic poisons, animal poisons, vegetable poisons, etc., and so on, which go to make up some of the causes of neuritis. Alcohol, we all know, if taken in large quantities and in frequent daily doses for a long time, will certainly and surely cause grave sequelæ, the physiological action of which I need not attempt to explain.

The patient in question was about thirty-five or thirty-six years of age, of fleshy short build, short neck, florid complexion, bilious temperament; a bookkeeper, a man who took but little exercise, save in the elbow joints, for quite a long while. He came of nervous ancestry, an aunt having died of climacteric mania (acute), and other relatives who had been insane for a short time, showing beyond doubt the predisposition to nervous trouble, which, if it had not existed, the use of alcohol might not have precipitated the disease in question. He drank from one to two quarts of whisky a day. I mean during the twenty-four hours.

At the request of my esteemed friend and your honored President, A. A. Smith, who sits before you and holds the gavel to-day, I saw this patient in consultation. He at first complained of pain and numbness in his lower limbs.

Being fat and very heavy he thought this due to his tight fitting clothes and constant daily sitting upon a high stool, bookkeeping, which was his occupation. But other symptoms soon followed, much more serious in character. He had "drop wrist" and "drop feet" and had no control of the muscles of volition. He could not change his arms or legs from any position, or, I should more properly say, could not put them forward. He could not put out his hands as if to shake hands with you, but if you would take his hand he could draw it back and pull you with considerable force. He could not place his foot forward but could draw it back. Every muscle in the limbs seemed to share in a greater or less degree in this general paralysis. Hyperæsthesia and hyperalgesia were prominent symptoms, it being almost impossible to touch his hands and feet without considerable pain. He of course could not hold a pencil or write, being powerless to control his fingers or grasp anything. He experienced tingling sensations in his limbs, and so much pain oftentimes as to prevent his sleeping at night. His appetite was very much impaired. Digestion correspondingly so. Bowels constipated. Skin of bilious appearance. Eyes yellow and muddy. Showing more or less malarial complication, which is usually the case with nearly every disease in malarial districts, of which Hawkinsville claims a place on the list. I forgot to state that there was also considerable wasting of the muscles of the limbs, wrist joints and fingers, giving almost the appearance of deformity. This was about the general condition of the patient and symptoms of the disease as well as I can describe an outline to you.

Now as to treatment, I can give you in a few words, which was about as recommended by authorities on the subject, save the consideration of the malarial features in the case. Dr. Smith, his family physician, recognizing this, of course gave him repeated doses of calomel and soda, quinine

and tonics of iron, strychnia, arsenious acids, etc. On account of his irritable stomach, pain and insomnia, was forced to give him hypodermics of morphine and atropia. He had also used electricity.

Having seen one other case of Alcoholic Multiple Neuritis and recognizing this as a clear and typical case, I at once advised the gradual withdrawal of the hypodermics of morphine and alcohol which were temporarily comforting the patient, but of course ultimately aggravating his trouble, and advised instead salol, antipyrine and quinine combined to ease his pain, a combination of bromides for sleep, elixir, lactopeptine, with phosphate of quinine, iron and strychnine (New York Pharmacal Association preparation) as a tonic and for indigestion. Electricity to spinal column and extremities five minutes daily. Thorough massage. Nourishing diet. A single dose of quinine (ten grains) before sunrise each morning. And for his bilious disposition, an occasional pill of protoiodide of mercury to touch up and arouse gently his secretion.

Under this treatment, which my good friend, Dr. A. A. Smith, kept up persistently and systematically, varying, of course, as his symptoms indicated, he made, in a few weeks, a good recovery, and is to-day doing as much if not more work than before his affliction.

This case, gentlemen, was one of peculiar interest to me as well as to my friend, Dr. Smith, who had never had the pleasure, I might say, of seeing one before. I give it to you in this plain and simple way and trust it may be of equal interest to you.

With all deference to the treatment of my deceased friend, Dr. Holmes, whose ability as a physician of his years was inferior to none that I know of in Georgia, I believe his patient would have made a quicker recovery, perhaps not as comfortable during the course of treatment, if he had not used the opiates and alcohol in his treatment.

ECTOPIC PREGNANCY—PATHOLOGY, SYMPTOMS AND TREATMENT.

BY R. R. KIME, M. D., ATLANTA, GA.

Ectopic pregnancy is a subject of great importance to the practitioner as well as to the gynecologist.

Every physician should be well acquainted with its symptoms and signs, so as to recognize such conditions as soon as possible and recommend such measures as the individual case may demand, which will often save the life of his patient.

So much has been written on this subject of late that to be entirely ignorant of the signs, symptoms and treatment of these cases is inexcusable.

I do not pretend to say all cases can or should be diagnosed previous to primary rupture; far from it, for many cases do not seek the counsel of a physician, and some do not suspicion anything wrong until suddenly seized with pain accompanied with indications of internal hemorrhage. It is those cases that consult the physician and present such signs and symptoms as warrant at least a possible diagnosis of an abnormal pregnancy, and especially those of primary rupture, that should be recognized by the attendant and active proper measures for relief advised.

In writing on this subject, if I should seem somwhat emphatic, it is but an expression of my convictions on this important subject, which have developed from some practical experience in my own practice and that of others, coupled with the opinions of writers on ectopic pregnancy.

The true pathology of these conditions has not been

solved, yet certain conditions seem to render some women more liable to its occurrence.

Imperfect development of fallopian tubes, salpingitis and its results, prolonged sterility commonly preceded ectopic pregnancy.

If normal fecundation occurs in the uterus only, as stated by Mr. Tait, it greatly simplifies this subject. The exact location where normal fecundation occurs is a matter of theory which possibly may be settled by future investigations. It is difficult to understand why nature would subject every fruitful woman to the risks of ectopic pregnancy by requiring fecundation to take place in tube or at ovary;; also why the wave motion of cilias in tubes should obstruct the migration of the male element on the destiny of which depends the propagation of the human race. It is claimed by some (Bland Sutton and Johnston) that the lining of the fallopain tubes are subject to a desquamative inflammation rendering the surface similar to that of the uterus, thus furnishing a suitable nidus for the development of the fecundated ovule.

Again the fimbriated extremity of the tube may become adherent to ovary as a result of salpingo-ovaritis, thus favoring tubo-ovarian pregnancy. Whether these theories as to causation be true or not, we are occasionally confronted with the grave problem of a fecundated ovule developing, primarily in the fallopian tube, the other varieties being a result of rupture of tube with a very few established exceptions.

Clinical History.—Sterility, with imperfect functions of generative organs, or a prolonged period of sterility after bearing children, is very suggestive.

A patient having suffered with salpingitis or pelvic peritonitis and revealing the symptoms and indications of pregnancy, with an enlargement in either broad ligament, should be watched with care.

To the above indications add a close clinical history and careful physical examination, and at least an approximate diagnosis may be reached. There will in all cases be some irregularity in menstrual flow, probably first a cessation or scant, later free, containing membranous structure revealed by washing discharges in water. This structure placed under microscope is said by Ayers, of New York, to present evidences of pseudo-decidual membrane distinguishable from the true by its structure.

Many cases will experience an uneasy sensation in pelvis in the right or left side often amounting to severe pain, others will suffer from intense excruciating bearing down pains more constant than labor pains, differing from pains of abortion, not being characteristically intermittent. Coupled with some of the above symptoms the usual indications of pregnancy, discoloration of the vaginal mucous membrane, softening of cervix, some enlargement of uterus yet not large enough to correspond to the time of pregnancy, an increasing enlargement in either broad ligament, the diagnosis of ectopic pregnancy should be made and cœliotomy advised.

After viability with a living fœtus the diagnosis can be more readily made.

In primary rupture we have the intense pain indications of shock, with internal hemorrhage confined to broad ligament, or free in peritoneal cavity, the location of which must be decided by physical examination.

To classify this condition, we have primarily:

1st. Tubal (most common).

2d. Tubo-ovarian.

3d. Ovarian (rare and doubtful).

4th. Interstitial.

As a result of rupture and continued development of fœtus we have secondarily:

1st. Intraligamentous, *i. e.*, extraperitoneal.

2d. Abdominal, *i. e.*, intraperitoneal.

The results of a tubal pregnancy if left to nature are variable, influenced greatly by the period at which primary rupture takes place and whether it be intra or extraperitoneal.

Intraperitoneal ruptures usually prove fatal unless operated upon, yet in a few, in which the placenta is not entirely detached, the fœtus continues to develop.

If the tube ruptures into broad ligament in the early weeks of gestation, a pelvic hæmatocele results, the contents of which may be absorbed or result in pus formation.

I have seen absorption of the effused blood take place to such an extent; the patient passed from under my care and considered herself well, and is yet living.

If fœtus survives rupture it may continue to develop to full term, then die and form a lithopædion, or more commonly the fœtus and cyst contents break down, producing septic poisoning, or fœtus ulcerates through into rectum, vagina or bladder.

The serious results of cases left to nature can often be averted by timely interference, as in the following case referred to me by Dr. Joseph H. Green, of Decatur, Ga. For a detailed report of case see *Atlanta Medical and Surgical Journal.* The case gave a typical history of tubal pregnancy with rupture about eleventh or twelfth week. About six weeks after rupture patient had a chill, with evidences of septic infection. About eight days after chill patient was operated upon at the Atlanta Polyclinic with the able assistance of Drs. W. A. Crowe, J. C. Avary, Joseph H. Green and other members of the Polyclinic staff. In the operation four cysts were encountered. The first one on entering abdominal cavity contained about one ounce of pus, the second two or three ounces of fluid resembling that of an ovarian cyst, the third about one pint of bloody fluid. The fourth contained fœtus partially decomposed

and measuring about three and one-half inches in length. Placenta left *in situ* to slough out; cyst wall stitched to parietal peritoneum; cyst and abdominal cavity irrigated with Thiersch's solution; drainage used in cyst; three artery clamps left on cyst wall near placenta to check hemorrhage, as all efforts at ligating increased hemorrhage. So efficient was asepsis maintained during the operation and afterward that there was no suppuration for seven days. Forceps were removed forty-eight hours after operation without hemorrhage.

From this case we may draw some practical lessons. Although fœtus was low down in pelvis, plainly felt through vagina, elytrotomy would have been a failure, for at least two of the cysts, one a pus cyst, could not have been drained. If the case had been left to nature and fœtus discharged spontaneously, recovery could not have taken place for same reason, while patient would most likely have died from septic influences before fœtus was discharged.

Electricity could have availed nothing; even if fœtus had been alive, it would only have induced the condition that inevitably required surgical interference. We are forced to the conclusion that nothing but cœliotomy would have met the indications.

I desire to mention a third case, which illustrates the interstitial variety reported in *Atlanta Medical and Surgical Journal*, 1890. Patient was not seen until after death of fœtus, which occurred about the fifth month. When seen the indications were so similar to that of a fibroid tumor of uterine wall it was treated as such by use of electricity, ergot, etc., without special benefit, and left to nature, as the symptoms were not such as to demand surgical interference. After some two years patient returned suffering considerable pain, with free purulent vaginal discharge, with indications of septic absorption.

Examination revealed fœtal structures detected through

cervical canal. Later the cervical canal was dilated (by Allen's surgical pump with improvised silk bags) for a distance of four inches and to a diameter of two inches, and the osseous remains of fœtus removed. An entero-uterine fistula complicated the case, fecal evacuations occurring entirely through uterus for some two or three weeks after operation. In irrigating colon, water passed out through uterus. Large rubber drainage tubes were carried up into the uterus a distance of near ten inches after operation. By irrigation and drainage the fistula closed, and patient made a rapid and complete recovery. From time of conception to date of operation was a period of four years and eight months.

This was certainly a case of interstitial pregnancy discharging into uterine cavity, notwithstanding Tait says they all prove fatal by rupture intraperitoneally. This case also illustrates the necessity for more careful diagnosis and surgical measures, for she would most certainly have died if she had not been possessed of a wonderfully stout physique and good constitution.

Treatment: 1st. In primary or secondary intraperitoneal rupture of ectopic sac, operate by cœliotomy at once.

2d. Before primary rupture, with diagnosis of tubal pregnancy, extirpate cyst tube and ovary. Fœticide for this condition by electricity and morphia injections are but temporary expedients, suitable for cases of doubtful diagnosis or where a competent operator cannot be obtained. Their use only allures patient into a false hope ef security when delay is dangerous. If diagnosis could be made in first three or four weeks of pregnancy, then electricity might accomplish more potent results.

3d. With extraperitoneal primary rupture into broad ligament in early weeks of gestation, producing pelvic hæmatocele, wait for absorption of effused blood. If it fail, then perform coeliotomy or vaginal drainage.

4th. If child survives primary rupture of tube into broad ligament, do not commit murder; keep a clean conscience toward God and man; let fœtus live, keeping patient under strict observance, ready to operate at any time when life of patient demands it or fœtus has at least reached a viable period. By waiting for development of fœtus and cyst, as Tait claims, the peritoneum is pushed up on the side in which they are located, so that in later months of pregnancy a lateral incision will enter cyst, and fœtus may be extracted without entering abdominal cavity.

5th. Surgical interference should be the rule in all cases of ectopic pregnancy reaching full term, even after spurious labor and death of fœtus.

Operative technique: Prepare patient aseptically, as in all abdominal sections, and if time affords, place thoroughly under influence of strychnia and quinine. Secure elimination by arousing the action of skin, kidneys and bowels. The quinine and strychnia prevent shock and paresis of intestines, thereby favoring action of cathartics and lessening tendency to intestinal adhesions after operation.

The different details of the operation will have to be varied according to stage of pregnancy, condition of fœtus and results of primary rupture as previously indicated.

If placenta is left to be absorbed, aseptically and hermetically close cyst, after manner of Tait; if left to slough, stitch cyst to parietal peritoneum, closing abdominal cavity, and if space admit, drain with tube and iodoform gauze after the manner of Mikoulitz, keeping wound well open until cyst fills by granulation from bottom. While placenta is sloughing, wash out thoroughly, maintain free drainage and do not forcibly detach placenta, keeping cyst properly disinfected.

Never give opiates; have bowels moved early by salines and enemata, no food, only sips of hot water until bowels move and vomiting ceases. Early catharsis relieves pain,

nausea, prevents intestinal adhesions and obstruction. I have never regreted giving cathartics early after operation, but have seen the evil effects of delay.

A REVIEW OF DR. SENN'S VIEWS ON ELASTIC CONSTRICTION.

BY W. H. ELLIOTT, M. D., SAVANNAH, GA.

Dr. Elliott addressed the Association as follows:

Mr. President:

At the last meeting of the National Association of Railway Surgeons, I had the pleasure of hearing Dr. Senn deliver an experimental lecture on the subject of "Elastic constriction as a hæmostatic measure." I was so impressed with the soundness of Dr. Senn's views, and the value of his suggestions that I have decided to ask your attention to a review of his remarks.

I have not written out what I have to say on this subject, for the simple reason that Dr. Senn had not written out his lecture, and if I attempted to put my remarks in writing I could not do Dr. Senn justice. I will endeavor, however, to do him as much justice as I can without having my remarks written.

You are all familiar with Esmarch's method, which consists in putting on an elastic bandage slowly and gradually, from the periphery up to a point just above where you are going to operate, so as to empty the limb of blood. He then puts on a tube, or a narrow elastic band at that point, so as to cut off the circulation from the limb entirely, then removing the compression bandage, proceeds with the operation. He has fitly called this "the bloodless operation." Esmarch was not the inventor of the bloodless operation, but we are indebted to his genius for improving its tech-

nique, and for making this an established method and popular procedure in surgery.

Dr. Senn maintains, however, that there are two grave objections to the methods as used by Esmarch. The first one of these is, that by forcibly compressing the blood out of the tissues by an elastic bandage, we are liable to send into the circulation or surrounding tissues pathogenic microbes. For instance, cancer cells, or the cells of sarcoma may thus be scattered and disseminated through the system, and also the cells of pus or of tuberculosis may be sent abroad to do damage elsewhere.

Dr. Senn's second objection is that constriction of the limb with a tube or narrow bandage at one point is liable to do injury first to the muscles, and secondly to the nerves. He cited two instances, in one of which a paralysis lasting for three months had resulted from linear constriction; and another instance where the paralysis had become permanent; and if the nerve is cut the functions of the muscles will be seriously interfered with.

I show you here a tube which is about the size, as far as I can judge from the picture, that Esmarch was in the habit of using in his method, and you are all familiar with the ordinary elastic bandage. I show you the Esmarch apparatus complete, except that the tube should have a chain on the end for locking. This latter is an unimportant matter, because you can do it with a little piece of tape.

Now, to obviate the objections to Esmarch's method, Dr. Senn offers two suggestions. One is not to empty the limb of blood by forcible compression, but by gravitation only. Simply take the arm or the leg that you propose to operate on, and elevate it from the operating table, keeping it up from one to two or more minutes, and you will be astonished how quickly the limb will be emptied so that you will not lose much blood in the operation Then he puts on the constrictor, which should not be a nar-

row one like Esmarch's tube. He uses an India rubber bandage, which should be at least two inches broad.

There are some points in regard to the manner in which the bandage should be applied. In the first place, constrictions on the vessels must be applied *quickly*, so as to at once cut off the circulation in both arteries and veins. The reason for this is obvious. If you apply compression gradually, you will stop circulation in the veins before you do in the arteries, and the limb is filling up with blood, which you will loose as soon as you cut. The constriction must therefore be put on quickly, and *first on the side of the limb on which the blood vessels lie.* In the case of the arm you will make compression on the inner side. You pass the bandage on the inside of the arm, give it one good pull in order to make constriction rapidly, and stop the circulation in both arteries and veins at once. Where the elastic constriction is put on the upper extremity, the most favorable position is just at the insertion of the deltoid, and if it cannot be placed there, then a little higher up. So too when operating on the lower extremity the constriction should be applied on the middle of the thigh or above that point, and not near the knee joint. It was in a case where Dr. Senn applied the constrictor just above the knee joint that he had paralysis of the saphenous nerve resulting from it.

Another consideration in the application of the constrictor is, that you should not put it on near to any joint, except perhaps the shoulder or hip. If you do, you run the risk of having paralysis after the operation. If you are obliged to put the bandage where the nerve is superficial, you can protect it from injury to some extent by placing a piece of gauze over it. This is Dr. Senn's suggestion. Dr. Marks, of Milwaukee, says the gauze ought always to be used in elastic constriction. The matter of applying it over the nerves is an important one, because

linear constriction, as you know, with a narrow tube, is almost equivalent to nerve section, and the integrity of the nerves afterwards may not be restored.

While discussing this subject and studying Dr. Senn's views, it is only just to Esmarch that I should read an extract from his book, edition of 1887. He says: "Parts which contain unhealthy pus must not be firmly bandaged, for infecting matter may thereby be driven upwards into the cellular tissue and into the lymphatics. In such cases one must be satisfied with raising the limb on high for a few minutes before applying the bandage, so as to diminish the amount of blood in the vessels." These remarks are from Lister, but Esmarch quotes and indorses them. Although Esmarch in his book draws a picture of a tube and recommends it, he also resorts to broad constriction made by a few turns of a rubber bandage, and also by the broad belt of Nicaise, both methods being shown in his illustrations.

Justice to Esmarch requires that these facts should be stated, because they are in his book published in 1887. But, at the same time, Dr. Senn could have no stronger indorsement of the position he takes than the facts in Esmarch's book. Within the last two or three weeks the correspondence between Dr. Senn and Esmarch has been published in the surgical department of *The Railway Age*, which settles the question at issue between the two gentlemen, and shows that the points of Dr. Senn are well founded.

Having decided upon the best method of rendering the limb bloodless, there are two practical questions to be considered. The first is, how long is it safe to continue elastic constriction, if you do it the right way? Dr. Senn performed a series of experiments upon dogs, where he applied constriction with a tube for a period varying from two hours and twenty-five minutes to twenty-six hours.

The operations were followed—especially those in the longer period—by more or less damage to the muscles and nerves, the animals being unable in many instances to use their legs for several days afterwards, and in one case where constriction was tightly applied for seventeen hours, gangrene resulted. The practical deduction that Dr. Senn draws from his experiments is this: That the limit of safe constriction is two hours and a half, and he advises that that time should never be exceeded.

In the so-called bloodless operation, you all know that it is liable to be followed by free oozing, and in order to reduce this to a minimum, Dr. Senn advises that, for five minutes before the elastic constrictor is taken off, the limb should be again elevated; that the wound, if it admits of it, should have its cavity filled with antiseptic gauze, and the flaps brought over and pressure made on them till the constrictor is removed. If in spite of this there is much oozing, he recommends a douche as hot as can be borne.

In closing, I desire to append the following conclusions formulated by Dr. Senn in regard to "Elastic Constriction as a Hæmostatic Agent."

1. The use of the elastic bandage to secure a bloodless condition of the limb should be discarded, as compression of the parts affected may produce mechanically, dissemination of malignant tumors and microbic diseases.

2. A bloodless condition should be secured by elevation of the limb prior to constriction.

3. Constriction should be made with sufficient force to interrupt at once both the arterial and venous circulation.

4. Prevent venous stasis by constricting quickly, beginning pressure on the side of the limb supplied with the principal blood-vessels.

5. Linear or too firm constrictions should be avoided, as they are liable to give rise to muscular injury and tempo-

rary or permanent paralysis, due to harmful compression of a large nerve-trunk.

6. Elastic constriction of a limb for hæmostatic purposes should be diffused over an annular space not less than two inches in width, and can be made with least danger of injuring important structures by an elastic band for this purpose or an ordinary elastic bandage.

7. Circular constriction of a limb should be made, if possible, at a point where the long nerve-trunks are well protected by overlying muscles, and if this cannot be done on account of the site of operation, a thick compress of gauze should be interposed between the constrictor and the limb.

8. The vitality of the tissues, when excluded from the circulation, is endangered by prolonging the ischæmic condition for three our four hours, and gangrene may take place if constriction is continued for a long time.

9. The process of karyokinesis in tissues temporarily deprived of circulation by elastic constriction, is unfavorably affected if constriction is continued for more than two hours.

ANTE AND RETRO-POSITIONS OF THE UTERUS —THEIR PATHOLOGY, SYMPTOMATOLOGY AND TREATMENT.

BY W. W. STEWART, M. D., COLUMBUS, GA.

To understand fully the malpositions of this organ we must first make ourselves familiar with its normal position, and second, with its supports.

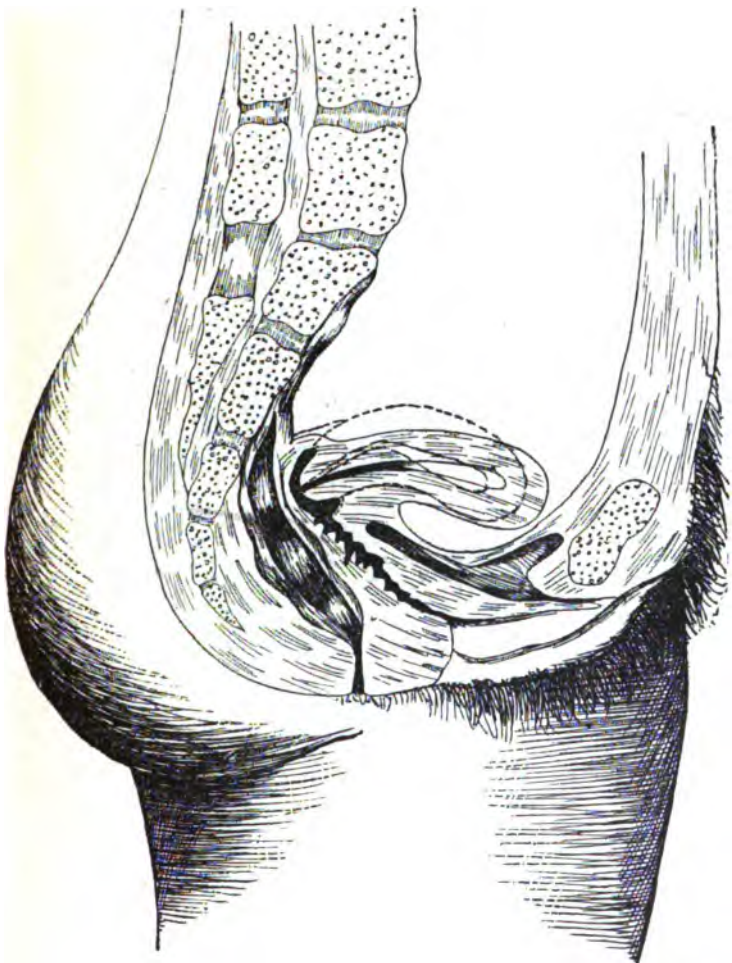
The normal position as you see in this plate, No. 12 (bladder and rectum empty), represents the normal position both in the virgin and the parous woman. In the virgin it is more anteflected, the normal position as described by Schultz when a woman is standing upright and her bladder and rectum empty, her uterus is nearly horizontal; is more or less anteflected and turned a little to the right.

This position is modified to a certain extent by the repletion of bladder and rectum.

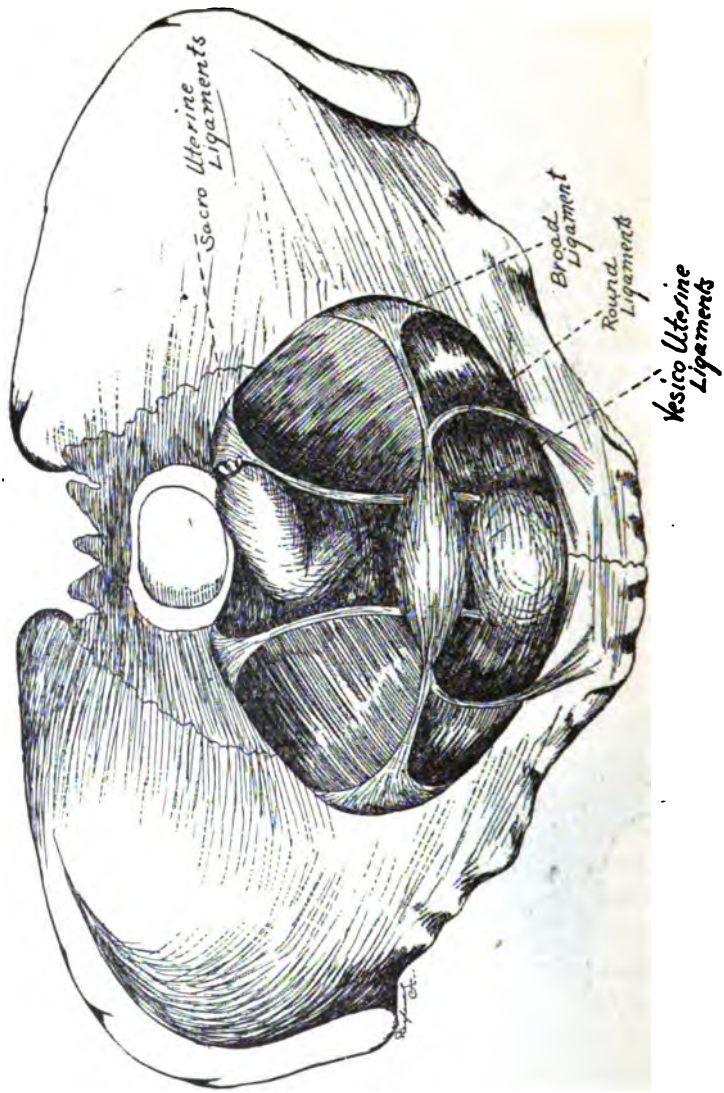
The next question in order is what holds the uterus to its normal axis. This question is plainly answered in plate No. 1. Here we have a diagrammatic outline of all but two of its supports. The two not represented here are the vaginal walls and gravitation with intro-abdominal pressure.

Thus we see the uterus is an organ nicely balanced on elastic cords well cushioned above by the abdominal viscera and below by the vagina, which also is supportive.

As to the etiology of displacements, I can think of no better classification than that of Thomas and Mundē, which I give below as taken from their book:



No. 12.


Sacro Uterine Ligaments
Broad Ligament
Round Ligaments
Vesico Uterine Ligaments

No. 1.

The general cause of uterine displacements may thus be tabulated:

1. Any influence which increases the weight of the uterus. Influences increasing weight are congestion, tumors in walls or cavity, pregnancy, excessive growth of any of the component parts, subinvolution.

2. Any influence which weakens the uterine support. These are rupture of perineum and posterior vaginal wall, weakening vaginal walls from subinvolution and over distention, stretching of uterine ligaments, relaxation of pelvic fascia, abnormally large pelvis, any influence impairing the sustaining power of the abdominal walls.

3. Any influence which displaces the uterus by pressure; as tight clothing, heavy clothing supported on the abdomen, muscular efforts, abdominal tumors, pelvic inflammatory exudations, repletion of bladder and rectum.

4. Any influence which displaces the uterus by traction; as contracting adhesions following pelvic inflammations, either cellular or intraperitoneal, cicatrices in vaginal walls, shortening of uterine ligaments, natural shortness of vagina and uterine ligaments, prolapse of vagina, rectum or bladder.

It is an interesting fact to note that the cervical and cervico-corporal flexions are most frequent in the nulliparous woman, while the corporal form is most often found in the multiparous.

Retroflexions are most usually found in cases in which there has been a weakening of the tone of the uterine wall, although it is often caused by direct force whether of rapid or slow development. The uterus may be either anteflexed, retroflexed or lateroflexed, or ante-lateroflexed, or retro-lateroflexed. All of these varieties have various complications, the most prominent of which is ascent and descent.

There are still two other forms, ante-position with retroflexion and retro-position with anteflexion.

Symptoms: Pain in back and loins, weighty, dragging sensation in the pelvis. Constipation in retro-position—vesical and rectal tenesmus in both. Great fatigue from walking, much complained of below the knees, lassitude and inability to lift weights, leucorrhœa and other signs of congestion.

In addition to these I must mention a uterine syndrome which is quite interesting, and at the same time of great aid often in obscure cases where sufficient direct symptoms are not complained of to suggest to one not accustomed to handle many of these cases the advisability of an examination.

1. Pain of a bearing down nature in the top of the head, caused by endometritis or vesical irritation.

2. Pseudo-angina with palpitation of gastric origin.

3. Irritative or indolent digestion with dilatation of the stomach. I would beg of you to remember this fact, for it will, I am sure, prove not only of interest but of profit to all. This dyspepsia is caused by the endometritis associated with flexion. The explanation of this is found in the peculiar richness of the sympathetic innervation of both the uterus and stomach, and is of reflex origin. Its line of symptoms are nausea, loss of appetite, vomiting directly after eating, it being rather regurgitant in character; flatulency, which occurs in the form of a chronic tympanites, the patient's stomach continuing to enlarge though she may have lost flesh.

4. A dry, hacking cough, which is paroxysmal and comes usually in three or five coughing efforts at a time. So troublesome is this that the patients who suffer therefrom cannot sleep at times. No inflammation of chest, pharynx or larynx can be detected, and it disappears with the uterine trouble.

5. Pain in either breast, usually the left.

6. Pain of a dull character in the wrists, inner side of the palms, and last phalanges.

7. Hysterical phenomena whose name is legion.

8. The fascia uterina, which you will recognize in a habitual chloro-anemic color, muddy complexion, dark circles under the eyes, together with a pinched suffering face, which completes the picture. In addition to these there are, of course, many symptoms peculiar to each individual case.

To illustrate this fully I will mention a case of mine which bears upon this point: Miss———, age thirty, occupation dressmaker, came under my care for dyspepsia and vesical tenesmus. For five years had been a great sufferer with pelvic pains, vesical and rectal tenesmus. Headaches, occipito-parietal and parietal in location; constipation at times, at others long continued attacks of diarrhœa, spitting up of food directly after eating, tympanites so marked that she was ashamed to go on the street. Had lost flesh for months prior to coming under my care. Measurement of stomach at umbilicus twenty-nine; three inches below thirty-five inches. Muscular walls tense. Leucorrhœa was quite bad, causing great discomfort and decided excoriation. Urine alkaline, no albumin or sugar. Stomach would easily hold six glasses of water without discomfort, when loud succussion sounds could be elicited. Percussion showed the stomach greatly dilated. Abdomen generally hyperæsthetic. Uterus anteflexed with decided endometritis. Patient was taken off of all starchy and saccharine food and given proper tonics and uterine trouble properly treated. When discharged had gained fourteen pounds, and stomach measurements were as follows: At umbilicus twenty-two; three inches below twenty-seven inches. Stomach was still slightly dilated, but caused no dyspeptic symptoms. All other symptoms disappeared.

PATHOLOGY.

Flexions and versions, either anterior or posterior, are often congenital, caused by an excessive nutrition in the anterior or posterior wall, as the case may be; the excessive growth causing a convexity in the side most highly nourished, and a concavity in the opposite.

Rokitanskey has proven that in a perfectly developed uterus weakening in its walls is often caused by endometritis, which creates an inward growth of the utricular glands into the submucosa near the os internum, which in consequence undergoes atrophy and enfeeblement.

Klobe gives as a frequent cause cystic degeneration of the cervical glands, which, from their increased size and subsequent pressure, bursting thereby, cause a collapse of tissue in the formerly dense framework of the uterus, leaving in its place a flaccid net-like areola tissue incapable of sustaining the uterus in its normal position.

The uterus being once flexed, either in the anterior or posterior position, there at once arises an acute congestion followed by subacute and chronic in the majority of cases. Especially is this true in cases of sudden displacement, and it holds good to a modified degree in all cases.

This is caused by veins with their flaccid walls being closed at the point of flexion, while the arterial walls, being rigid, remain open and continue to convey blood into an organ already full, thus causing the acute congestion. The flexion cuts off the return flow through the hypogastrics, thereby throwing all the work upon the inadequate spermatic veins. As a result of this the pampiniform flexus is constantly overdistended, and an œdematous boggy condition is set up in ovaries, tubes, broad ligaments and uterus, making the flexion worse, at the same time setting up a tendency to hydrosalpinx and cystic degeneration and formation in ovaries and broad ligaments.

One of the most prominent pathological lesions with which we have to deal as causative in displacements is slight infection at parturition, causing subinvolution with metritis and parametritis, followed by contraction of uterine ligaments.

After thus hurriedly considering the etiology, pathology and symptomatology of these troubles, we will now take up the cases themselves and discuss them, endeavoring at the same time to bring out the treatment in each case.

Here in plate No. 2 we have a simple retroversion with beginning prolapse caused by subinvolution and relaxation of the uterine ligaments, vaginal walls and perineal fasciæ. This is a case in which, if of recent origin, we can look for good and quick results. Having made first a clear diagnosis of the cause (and I would state here that is the keynote to the successful treatment), we will begin our treatment, which, in all displacements, will be along certain general lines. These we will give now and not repeat:

1. Remove all weight from the hips and constrictions from the waist by using skirt supporters.

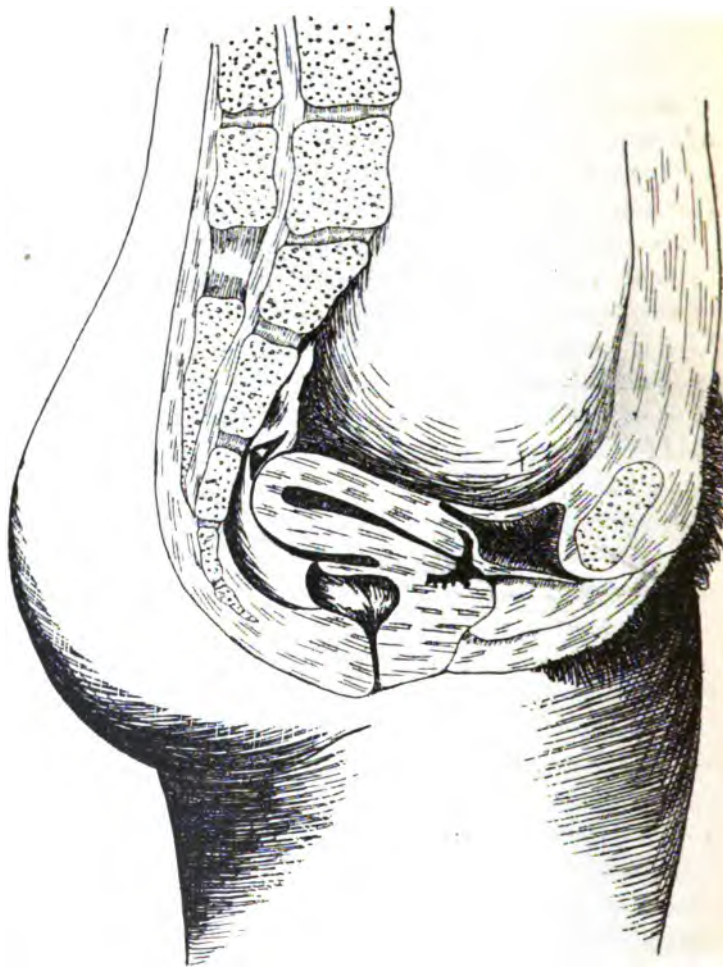
2. Measure your patient at the line of the umbilicus, or just above, and secure for her a corset waist two inches smaller than waist measure.

3. If abdominal walls are pendulous and relaxed use an abdominal belt made for the patient in question.

4. Require a regular amount of daily exercise, to be gradually increased, that will not overtax the strength.

5. Order alternative hot and cold douches to be taken in the dorsal position. Use the fountain syringe only, with one quart in quantity—patient to remain in recumbent position for thirty minutes after taking.

The alternate hot and cold douche tends to cause contraction of the muscular fibers of the uterus and uterine ligaments, thus bringing about good nutrition and muscu-



No. 2.

lar tone, as is produced by electricity. The cold douches should be taken last.

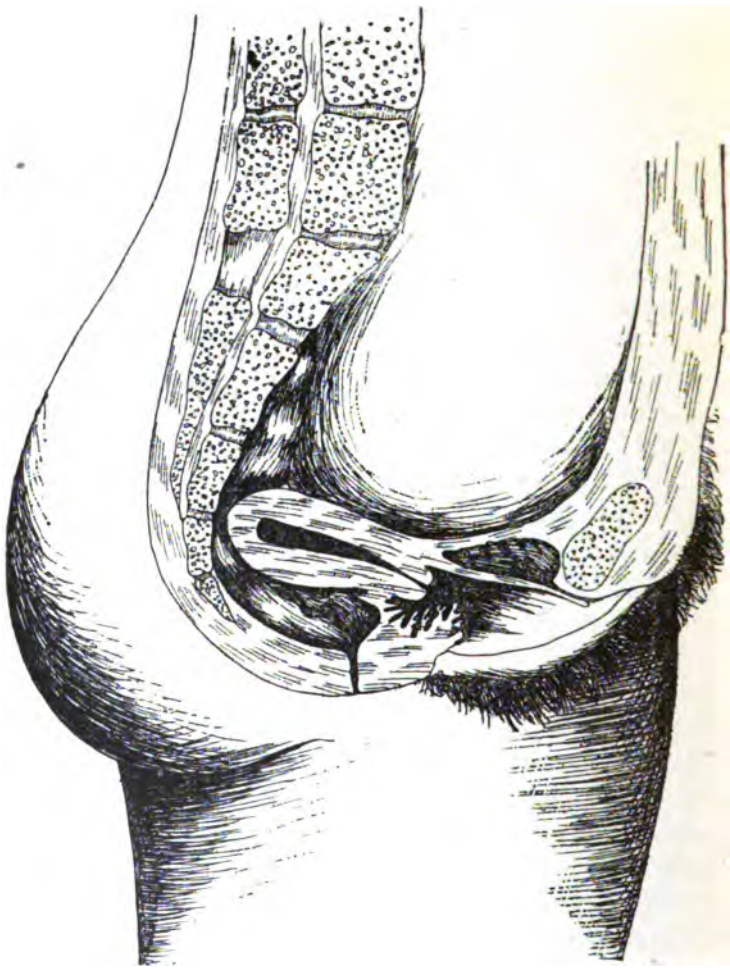
6. Guard well and build up your patient's general condition.

As to the special treatment of this case in hand, the patient should be placed in the genu-pectoral position and uterus replaced. This position should be well explained and taught the patient, with instructions to assume it three or four times daily, and at the same time to open the vagina and allow it to distend with air, then to take successive long breaths and remain in this position for ten minutes, then gradually lie over on her side and remain quiet for awhile; thus a replacement three or four times daily is accomplished.

If the uterus or pelvic organs are very tender the organ should be supported with a cotton-wool tampon made like this one I show you, and soaked in glycerine and rose water āā one-fourth, Lloyd's hydrastis one-half, placed directly behind the cervix; transversely two or three smaller pledgets are placed in front; these to remain for not over forty-eight hours, when they should be replaced by fresh ones.

If patient can tolerate it a hard rubber Hodge pessary is better, as it allows the douches to be taken without its removal. This pessary should be *fitted* to the patient as follows: Measure, while in knee-chest position, distance from posterior wall of cul-de-sac of Douglas to inner surface of pubic arch; then the transverse width. This can be nicely done with dressing forceps. Having these measurements, select the pessary you wish and immerse it in boiling water till soft; then mould to suit the case by measurements taken. It should not give pain, and should scarcely be felt.

Now, this patient is suffering from subinvolution; so we will give her, in addition to a good tonic, fifteen to twenty drops of Squibb's fluid extract of ergot tid. and



No. 3.

ten grains of potassium bromide in solution, the latter to be given after meals and to be continued till uterus is normal in size.

If endometritis exists begin all treatment by a good curetting, and pack uterus with a long strip of iodoform gauze, to be removed on the third day.

The laws of antisepsis should be carefully carried out throughout the treatment.

Now in this plate, No. 3, we have a very interesting case, bringing out strongly another frequent cause for displacement.

Miss G., aged twenty-five, when twelve years old fell upon a steelyard hook, the hook entering the vagina and tearing the tissues badly, its course being upward and outward against the inner surface of the pubic bone.

Had been a sufferer in the long line of symptoms so familiar to us all till she fell into my hands five months ago. On examination, the condition you see here represented was found. The vesico-uterine ligaments were taut; cervix fixed in its anterior and prolapsed position uterus retroverted.

Patient placed in genu-pectoral position and uterus returned as far as practicabel to its normal position. Then I began to stretch the vesico-uterine ligaments by daily pushing the cervix backward as far as she could tolerate, and after ten days of this treatment succeeded in getting it back sufficiently to use a figure of 8 pessary, which she wore with comfort for one month, when length was increased till uterus was in normal position and freely movable.

The uterus was decidedly sinistro-rotated, and when pessary was removed would immediately return to its former position to a certain extent.

Thinking it was one of those cases in which Alexandre's operation would be of benefit, I operated and found the hook, which entered the vagina on the right

side, had torn out the round ligament, causing the sinistro displacement; so was compelled to sew up the wound and depend upon a figure of 8 pessary to do the work.

This same displacement with similar etiology we find in women who have passed through protracted labor when the head has pressed against the pubic arch, setting up a

FIGURE OF 8 PESSARY.

cellular inflammation, which is followed by contraction of the vesico-uterine ligaments. In such cases the only method of relief is found in the figure of 8 pessary which should be made by measurements and the length gradually increased till the cervix holds its normal position. No other pessary will suit or benefit such a case. The same contractions I have also found after a prolonged and active cystitis.

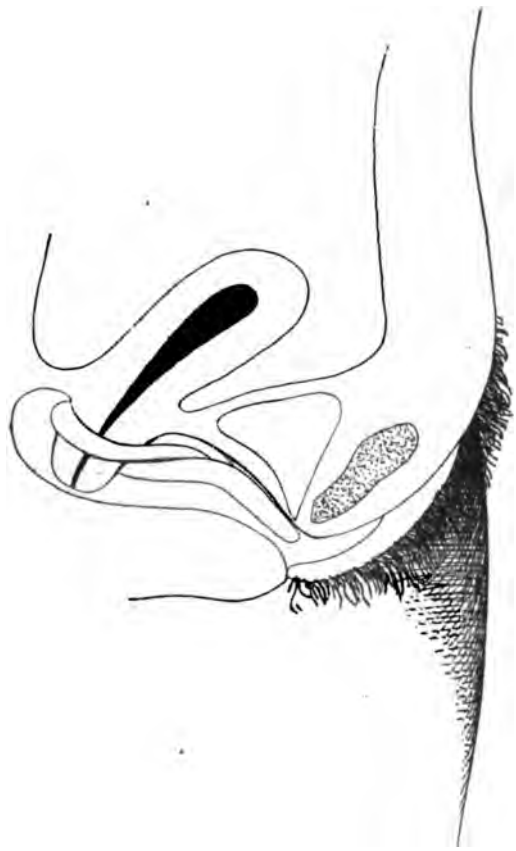
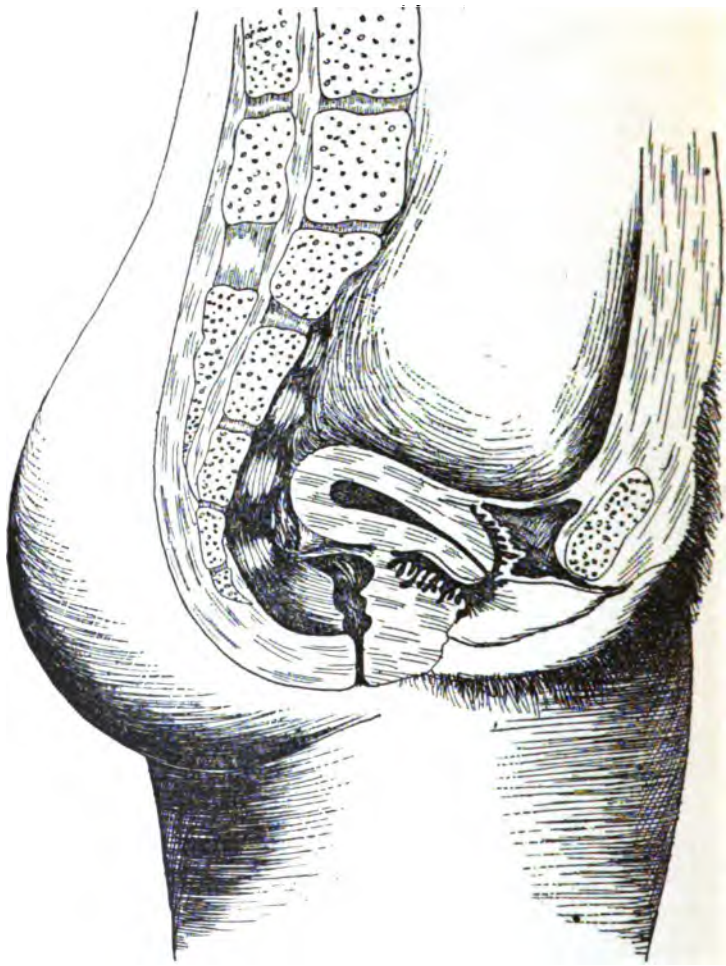


FIGURE OF 8 PESSARY IN POSITION.

Our next case, gentlemen, represents a complication which is apt to prove interesting.



No. 4.

This represents a case, Mrs. G., age twenty-seven, one child, sent us from Jacksonville, Florida. A case of retroversion with prolapsed tube and ovary and elongated cervix.

This case was one of peculiar interest, as it demonstrated to my mind what persistent care and strict attention to directions would do.

The etiology in this case was general relaxation with subinvolution.

The same general line of treatment was carried out as in case No. 2.

The genu-pectoral position was assumed four or five times daily, and cotton-wool tampons placed directly behind the cervix once in twenty-four hours. This was kept up for three months; at the end of which time the ovary resumed its normal position and a pessary could be used, which she wore for two months more. The pessary was then removed, the uterus remaining in its normal position.

Case 5. Mrs. P., age thirty, four children, was sent to me from Florida, for bladder trouble and epileptic fits. At birth of last child, three years ago, had considerable trouble, the nature of which could not be learned. Was in labor forty-eight hours when an instrumental delivery was accomplished, after which she had fever for two weeks and was in bed forty-five days. On resuming her duties was troubled with a constant desire to pass water. Pain in loins; bad and almost constant headache, occipito-parietal. Constant leucorrhœa, constipation to a fearful extent.

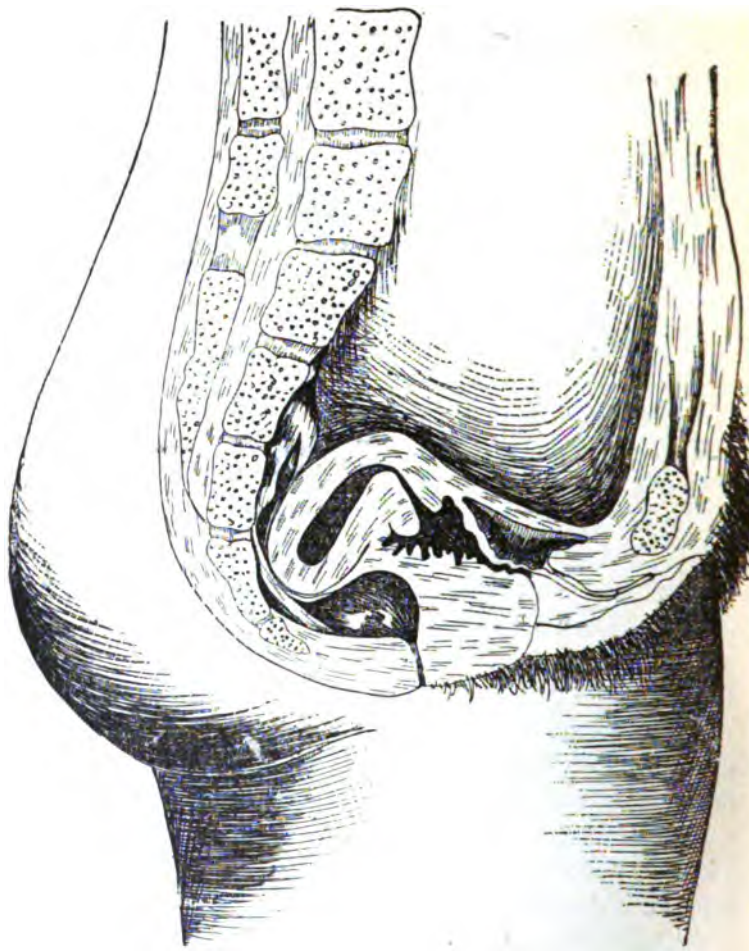
Two months after resuming her duties, patient was seized with what was diagnosed to be epilepsy of the grand mal type, for which she received constant treatment to no avail.

Attacks grew more frequent and more prolonged. After an attack would remain unconscious for six to seven hours.

This was her condition augmented by irritated dyspepsia and dilated stomach when I first saw her.

The general condition you see depicted in this drawing.

Uterus retroflexed and drawn backward and upward by sacro-uterine ligaments. Marked endometritis. Roof of



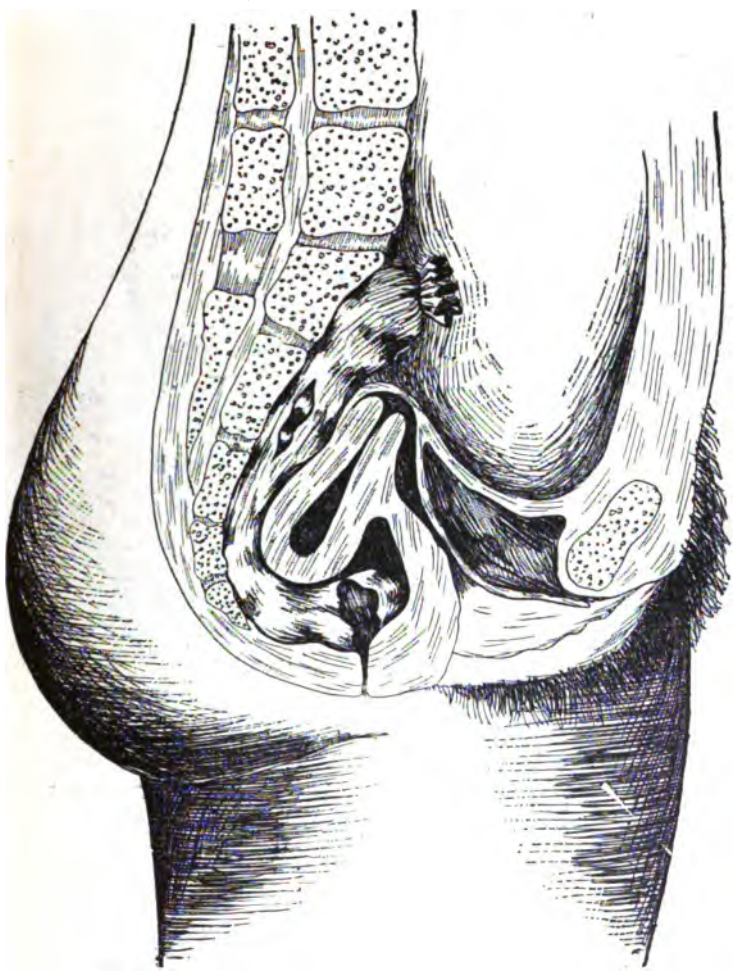
No. 5.

bladder taut and paralyzed. Marked cystitis, 20 per cent. by measure of pus in urine.

Perineum torn to second degree which is not shown in this drawing. Cervix bilaterally lacerated. Fascia uterina marked.

She was first curetted and uterus packed with iodoform gauze.

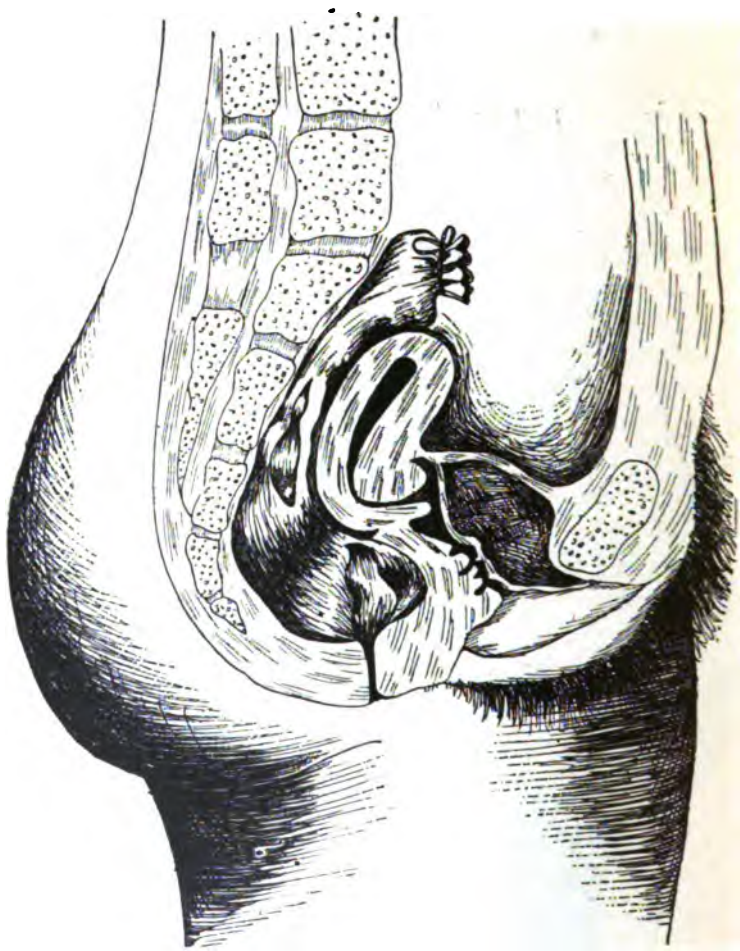
Six days thereafter cervix was operated upon and in fourteen days perineorraphy was performed. After this had no more epileptic seizures and returned home in good



No. 6.

health, the uterus returning to normal position after curetting and other operations mentioned.

Our next case, illustrated in plate No. 6, is another form



No. 7.

of retroversion which for its causation has a contraction of the sacro-uterine ligaments, without other pathological conditions than those secondary to version.

The bladder in all of these cases as you can see is almost surely involved.

In this case the contractions were so firm that at first it simulated adhesion. It was with great effort the uterus was restored to the normal position and a long course of tamponing was required, the cul-de-sac being well packed before the ligaments were sufficiently stretched to allow the use of a pessary, which patient has now worn for seven months.

It was removed two weeks ago and uterus remains now in normal position.

How long it will remain so is more than I can say.

Plate No. 7 represents another case which is in striking contrast with No. 6, the pathological lesion being the same. Here we have elevation of the uterus with anteflexion of the cervix. This is a rather hopeless condition. The ligaments are hard to stretch on account of the cul-de-sac being obliterated and taken up by the flexion of the cervix.

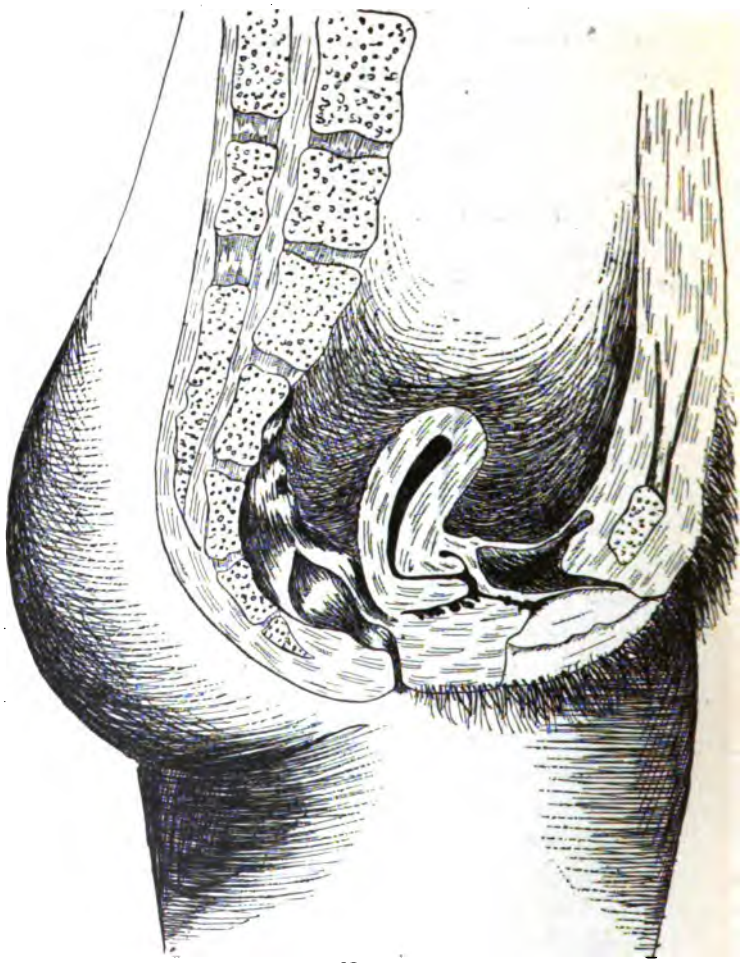
The best treatment in this instance is to open the cervical canal by incision of the lower lip of the cervix and the removal of a part of the angle of the upper portion at the internal os, and subsequent use of a glass flanged tube or stem pessary. The former is preferable, to be worn for six or eight months, and dilatation of the canal practiced at intervals of two months for a year thereafter.

In plate No. 8 we have the same uterine deformity; but in this case the pathology is markedly different.

We have no inflammatory condition of the ligaments in this instance, the deformity here being caused by impaired nutrition, constipation and tight lacing.

In this case we can hope for good results. We will first remove all weight and tight bands from the waist by supporting the clothing from the shoulders. Second, correct the constipation. Third, introduce a Schultz figure of 8

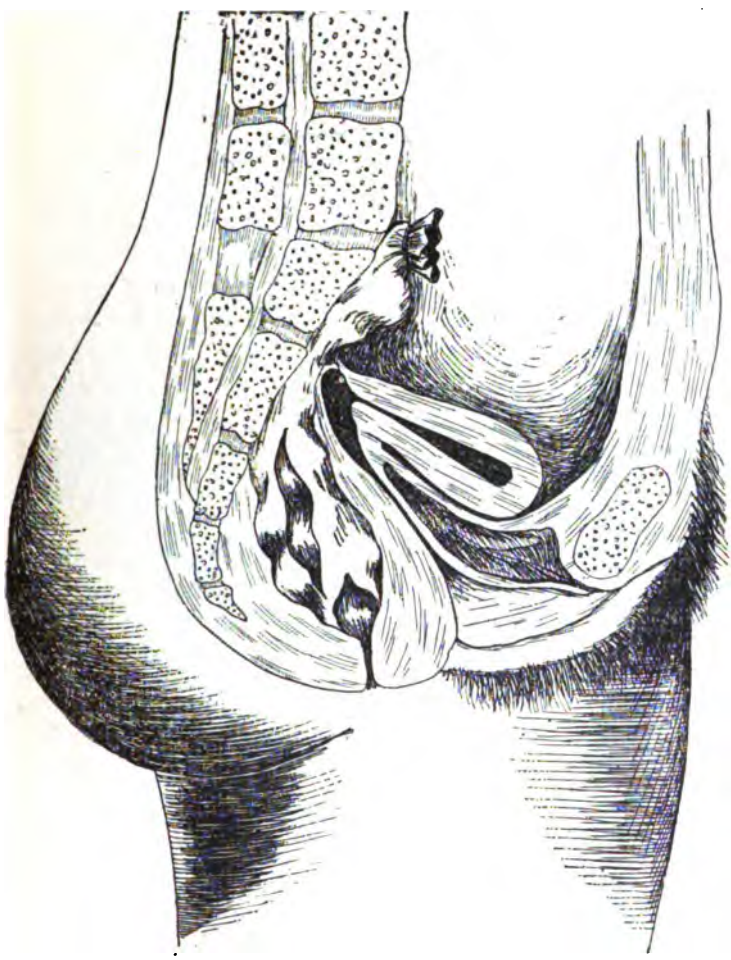
pessary which, in pushing the cervix backward, will correct the existing anteflexion of the cervix. Add to this good exercise and fresh air and a cure will promptly reward your



No. 8.

efforts, provided the trouble has not existed so long that marked degenerative changes have taken place at the point of flexion.

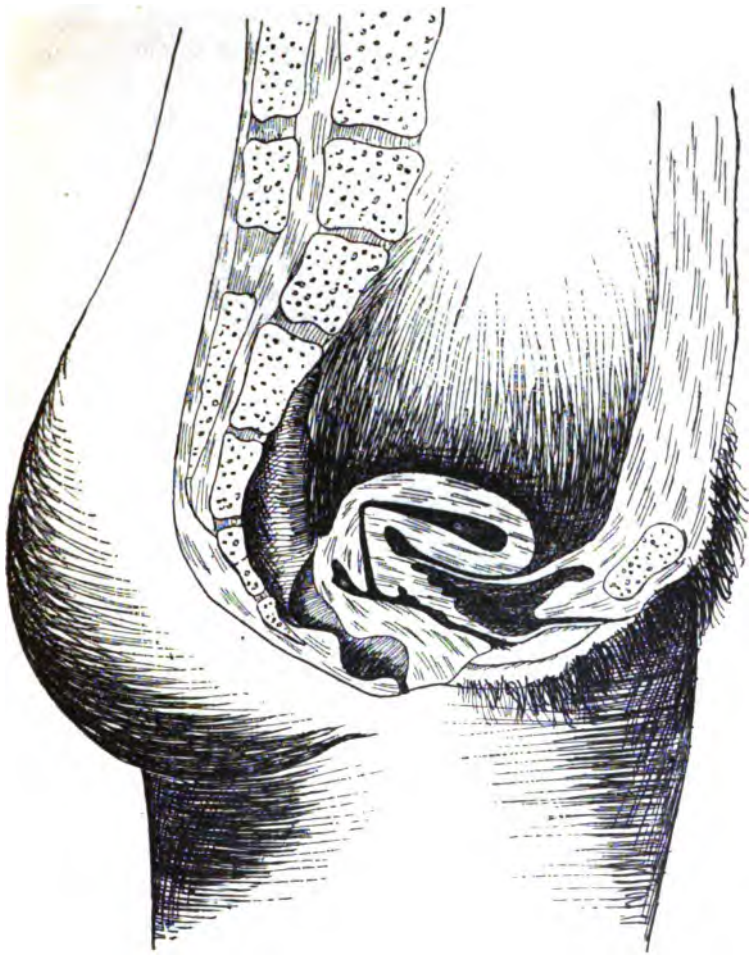
Plate No. 9 represents an interesting case sent me from Eufaula, Alabama. Mrs. R., age twenty-five, had two children. With the first there was no trouble, patient being perfectly well till the birth of second child, two years ago, at which time she had some slight septic trouble which caused a rise of temperature for several days, which



No. 9.

soon subsided. She had at this time some soreness over abdomen with tympanites. On coming to me her greatest complaint was from bladder in the form of chronic cystitis, and also obstinate constipation, with chronic dyspepsia and meteorism. On examination a clear diagnosis was made of anteversion, due to chronic posterior parametritis and metritis. The sacro-uterine ligaments were contracted, and cervix fixed. Bladder was examined with cystoscope and a large ulcer detected, caused by decomposition of urine in the bladder. Treatment consisted, first, in curetting and packing uterus with iodoform gauze. After four days this was withdrawn and a tenaculum caught in posterior lip of cervix, and gentle traction practiced for ten minutes at each sitting—they being every other day. The ligaments stretched quite rapidly, and with the aid of glycerine tampons and hot water in four weeks cervix was about in its normal position. The bladder trouble was treated at the same time, and at the end of two months patient was discharged with a cradle pessary, which I removed permanently five months after, to find everything in good condition and patient enjoying good health.

Plate No. 10 gives us an illustration of a form of anteflexion often found after confinement when there has been some septic infection, followed, as is always true in such instances, by subinvolution. The fundus uteri becoming too heavy for its supports, falls either forward or backward, as the determining influence tends. In this instance forward. If this patient should fall into my hands soon after the deformity had taken place, I would hope—with good grounds—for a cure. I would first treat the metritis and endometritis, which is sure to exist, then the subinvolution, with the potash salts and ergot, assisting it to retain the normal position by the aid of a cradle-shaped pessary and douches, which will aid largely in reducing its size.

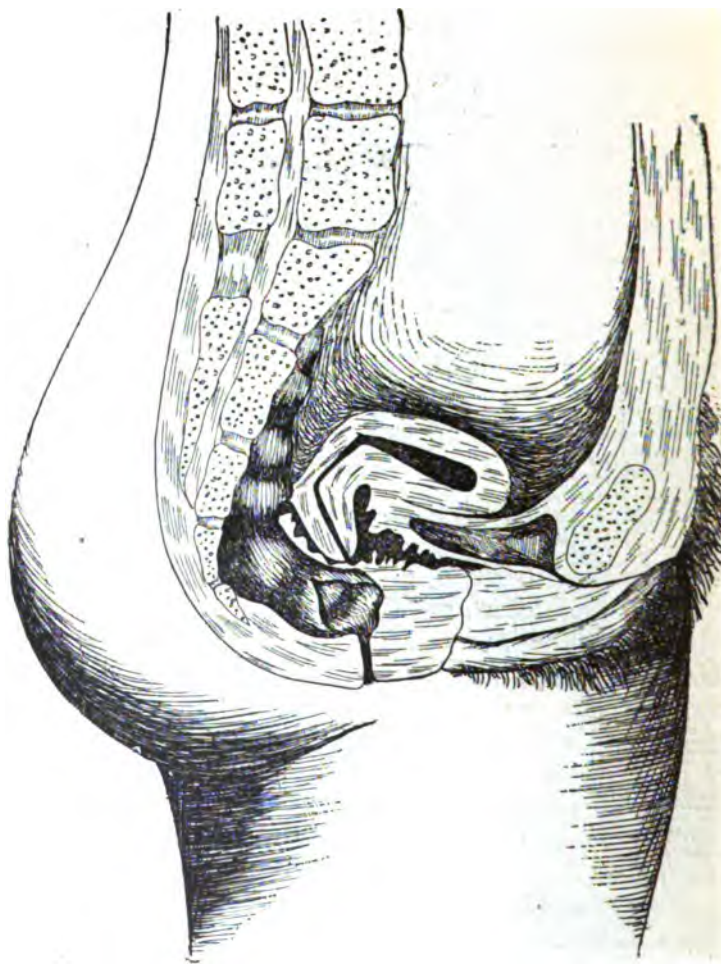


No. 10.

Add to this good tonics, an abdominal belt, skirt supports, corset waist, good food and fresh air, and our treatment is complete.

Plate No. 11. Gentlemen, this is a case which brings out a point in general medicine which it is well for us to constantly bear in mind. This represents the case of Mrs.

S., age twenty-seven, who came to me from Macon. When seventeen years old had a protracted spell of typhoid fever. During the two months following her recovery she grew ten inches in height, was pale and anemic, and entire system was in a run-down condition. Being a young lady of fashion, she was put into corsets at once. Three months



No. 11.

after her recovery, she menstruated for the first time after her illness. For two days prior, and all during its course, she suffered intense pain, bearing down in character. This dysmenorrhœa continued, gradually increasing. Appetite became capricious, bowels constipated, and the long line of symptoms mentioned in the first of this paper developed. At twenty-two she married, after which all symptoms became worse until she became what I term a sofa invalid. In this condition she was treated by several physicians in Macon, one in Baltimore, and one in New York.

Then she came into my hands, and the results attained by us all so far are not at all flattering. Her condition now, is as follows: The uterine syndrome is complete; abdomen hyperæsthetic; anteflexion of body of cervix with retro-position and dextro-rotation; bladder irritable; no cystitis; ovaries and tubes exquisitely tender and slightly enlarged. In the last year has developed amenorrhœa, but at each period, though flow consists only of about one drachm of bloody mucus, she suffers with a burning, boring pain in uterus, shooting pains and intense headaches. These headaches are more or less continuous during the entire menstrual period. I have both packed and dilated the uterus, and tried to use supports of every conceivable kind, but she can tolerate none of them. Cotton-wool even gives pain. The second flexion is so high that cervical amputation or incision would be of no avail, and ovariotomy is my last resort, which I will perform on my return to Columbus.

The great point of interest in this case is a warning to us all to admonish our patients, convalescing from weakening or wasting diseases, or any condition diminishing muscular tone, to avoid corsets and heavy clothing suspended from the waist. Instead of the corset use the corset-waist. In this case we see the dire results from a disregard of the existing conditions.

A BOARD OF MEDICAL EXAMINERS: THE STATE'S MEDICAL DUTY.

BY LUTHER B. GRANDY, M. D., ATLANTA, GA.

In November last I suggested to the Atlanta Society of Medicine the advisability of taking steps toward the establishment of a Board of Medical Examiners in Georgia. The suggestion was acted upon with a promptness and enthusiasm which, I may say, both gratified and surprised me. A committee of prominent members of the Atlanta profession was appointed, and these gentlemen prepared a bill at once and submitted it to the legislature then in session. It passed the Senate by a vote of thirty-five to nine. From the beginning it encountered the rabid opposition of the Eclectics, Homeopaths, and one large member of the regular profession, toward whom, for personal reasons, I shall here indulge the charity of silence. Alarmed by the vote in the Senate, this triple but anomalous alliance sought to strengthen their unworthy cause by employing a learned counsel from Savannah who, for a consideration, doubtless, discovered that the bill was unconstitutional. Not only that, but there was another lawyer at the capitol hired to oppose this bill *by a notorious peripatetic quack doctor from Boston!* Such was the opposition. Such is the opposition to progressive and protective medical legislation everywhere. It was the same old story of the combination of quack doctors with those whose conception of medical teaching is a "college for revenue only." Before the Committee of the House the matter was thus brought to such inextricable confusion that further action was postponed

until the next meeting of the legislature in the Fall. So that the bill may be considered as still pending.

It is not too much to say that this is a question which touches every home in Georgia, into which sickness or accident will surely come at one time or another. There are two classes of so-callod doctors from whom the people of this and every State need to be protected. One is the ignorant practitioner without capacity, the other is the unprincipled charlatan without conscience. As I have already said in another place (*Atlanta Medical and Surgical Journal*, November, 1892), "a large proportion of the citizens of any State have not intelligence enough to protect themselves against these persons. Then it becomes the duty of the State to protect them. If those who offer their professional services to the community were everywhere what they should be, both in intelligence and integrity, there would be no cause for legislation. But the disagreeable fact remains that the medical schools of the country every year send out young men totally unqualified for practice, while there are those also so devoid of every sentiment of honor that they are willing to extract their dishonest livelihood by preying upon the ignorance and credulity of those whom they are able to deceive. Their brazen faces and lying advertisements disgrace the columns of the daily press, which will print anything for money. They cure the incurable, remove the unremovable, and accomplish the impossible, all either 'by consultation or by mail,' 'without the use of the knife,' with 'satisfaction guaranteed.' I am glad to say that the quack's field of operation is becoming more and more restricted year by year as the light dawns upon the intelligence of State legislatures. The door of quackery is closing in this country, and those who make their shameless living out of it are being forced to seek hospitable shelter in those States yet willing to harbor them. In Georgia, which boasts of being an Em-

pire State, these Ishmaels in the profession find abundant opportunity still to ply their nefarious trade, with none to molest or make afraid."

I fancy that the English poet (Crabbe), with prophetic vision, must have been reading the pages of the Atlanta *Constitution* or the *Evening Journal* when he wrote, early in this century:

> . . . Our quacks are gamesters, and they play
> With craft and skill to ruin and betray;
> With monstrous promise they delude the mind,
> And thrive on all that tortures human-kind.
> And twenty names of cobblers turned to squires,
> Aid the bold language of these blushless liars;
> And then in many a paper through the year
> Must cures and cases, oaths and proofs, appear.

It should touch our State pride, I think, that anybody can practice medicine in Georgia who has fifty cents to pay the county clerk. No diploma is necessary, and no license is furnished. But we must register our names in the court-house in order that the sheriff may know from whom he is to collect the professional tax of ten dollars per year. If one wishes to run a cab or dray he must get a license; if he wishes to sell meats, or drugs, or cigars, or soda water he must get a license; if he is a pawnbroker he must get a license; if he wishes to insure you or your property he must get a license; if he wishes to peddle wares at your door he must get a license; if he opens a theater to furnish you with recreation or amusement he must get a license; but one can physic you with aconite and strychnine, or open your abdomen, *without a license.*

The mistake which underlies the present law, if it may in charity be called a law, is in giving to a college diploma the authority of a license. This is indeed the *fons et origo mali.* It is giving too much power to colleges, actuated as they may be and often are, by personal interests, to make them the judges as to the qualifications of those who wish

to practice medicine. The mission of the college is to *teach* the student; to *license* him to practice is quite a separate and distinct duty belonging to a separate and distinct power. The President of Harvard University has said: "Why is it that admission to the profession of medicine (in Massachusetts) is at a disadvantage as compared with admission to the profession of law? The very last thing the law school or the law faculty would desire would be that their degree should admit to the bar. It is a clear disadvantage in medical education that the degree given by a faculty, a teaching faculty, should admit to the profession. The standard should always be outside, determined by another power."

The United States is the only country in the world in which this blunder is allowed. A diploma is no guarantee of professional fitness. The value and significance of a bare diploma are diminished now by the commercial spirit which plays too important a rôle in our teaching institutions. Our lawmakers may not know it, but it is a fact that there are too many teachers in our faculties everywhere who appear to believe that the success of their teaching plant is proportional to the amount of money that may be gotten out of it. It is this spirit which graduates students every year and declares them competent to practice a responsible profession who ought to be sawing wood or making brick.

A diploma a license! What a terrible mistake! How many cases of suffering and death can this audience relate, traceable to that dangerous paradox? Think I am exaggerating? I saw a child that had been treated for ten days with liniments for a supposed sprain of the hip-joint, resulting from a fall. The evidences of dorsal dislocation were so unmistakable that the wayfaring man need not have erred in the diagnosis. Under chloroform the dislocation was easily reduced, a large abscess followed which

had to be opened, and the little patient suffered, from first to last, for many weeks. Why? Because the doctor first called didn't know his business. But he had a diploma, and a *diploma is a license in Georgia.* On this same subject a recent writer says: "I stood by the body of a woman, and as the post-mortem progressed men turned pale. There before us was a wound from vagina to abdominal cavity, through which the hand could be thrust, telling an awful story of shock, hemorrhage and death. The practitioner who made that wound had been trying to force a pair of placental forceps into the os uteri, and had madly and ignorantly pushed the instrument through the cul-de-sac above." Thus a life was taken, and a whole family made unhappy through the criminal blunder of an ignorant physician. But he doubtless had a college diploma, *and in his State also a diploma is a license.*

The medical degree can be too easily and cheaply gotten in this country. Did you know that there are places where a diploma may be bought for a mere song, and no questions asked? A New York *Herald* reporter recently bought the title of "Doctor of Medicine" from one of these for fifty dollars. There are two hundred and twenty-five "graduates" of these bogus institutions practicing medicine *upon their diplomas* in Pennsylvania. For this sort of "doctor" so-called, conceived in sin and born in iniquity, an honorable people and an honorable profession can have nothing but contempt. I do not know if there is any of this unlawfully begotten species in Georgia; but there may be, *and his diploma is his license.*

The absence of such a board and the fact that a diploma is a license is but throwing down the bars to all the incompetent and fraudulent who are being rejected in other places. And here is the point of this matter which is of the most interest to us as physicians; because it has such a bearing upon the *personnel* of our State profession. If the medical

profession in Georgia is to be made up largely of those who have been refused by other States on account of incompetency or dishonesty, then it is time we were entering our protest at once. There are about 2,700 physicians in Georgia, and still they come, and all are welcome. None are ever rejected. By a reasonable estimate about seven hundred of these would have been declared unqualified in other States. There have been nearly four hundred rejections by the Virginia and North Carolina boards within the last seven years. What do you suppose becomes of all those persons who are examined and declined by the boards of New Jersey, Virginia, North Carolina, Florida, Alabama, Illinois, Minnesota and other States? Our neighbors, Alabama, South Carolina and Florida, have rejected respectively 20, 29 and 30 per cent. of their applicants. Where do these people go? As for the quacks, when driven from one place they quickly take refuge in another. They change their sky but not their affections (*Cœlum, non animum, mutant*). Like other moving bodies they travel along the lines of least resistance until they find some place still willing to receive and patronize them. The situation in Massachusetts to-day is proof of this statement. Dr. Draper, of Boston, says:

"One State after another has passed restrictive laws of greater or less stringency with the single aim of discouraging quackery. Massachusetts (and we will add Georgia) stands almost alone in her attitude of toleration. The action of neighboring States, near and more distant, in requiring irregular practitioners to move on and to stand not upon the order of their going, has brought to our too hospitable territory a horde of medical pretenders who have not been slow in discovering the advantages of an asylum here."

The experience of Illinois demonstrates how the *personnel* of the profession may be affected by such legislation as we

now contemplate. In the thirteen years ending January 1st, 1891, the State Board of Health rejected 2,283 candidates for license. In 1877, when their law went into effect, there were 7,400 physicians in the State, 3,600 graduates and 3,800 non-graduates. Ten years later there were 6,065 physicians, of whom 5,327 were graduates, 738 non-graduates. In 1877 the percentage of graduates was 48; in 1886 it was 87. In 1877 the percentage of non-graduates was 52; in 1886 it was 13. In spite of the large increase in population during the ten years there was a decrease of 1,335 in the number of physicians in the State, and a decrease of 3,062 in the number of non-graduates, with an increase of 1,727 in the number of graduate physicians*. All of which means that Illinois now has a capable, honest and intelligent profession, the result solely of efficient restrictive legislation.

One of the most important and salutary results of this sort of legislation is its effect upon medical education. The existence of so many of these examining boards in the States has been one of the most potent factors in arousing the colleges of the country to better work. The latter know and appreciate that the character and thoroughness of their teaching will be measured by the fitness or unfitness of their graduates as determined by these examinations. The consequence has been that our system of medical education has been overhauled and improved within the last five years as never before. In this respect the Southern colleges have not done their duty. There are about one hundred and forty medical schools in this country and Canada; one hundred and thirty of these require a reasonable preliminary education before matriculation. How many of this number are in the South? Only three. Of the remaining ten which make no effort to ascertain if the applicant is capable of receiving a medical education, nine are Southern

*Dr. W. L. McCreary in *Southern Journal Homeopathy, Jan.*, 1893.

colleges. Of the seventy-eight American colleges which require three or more years of study and three terms of attendance upon lectures only six are in the South, and *three of these are schools for negroes.* There are not over fifteen colleges in this country which now graduate students at the end of their second course of lectures. Twelve of these are Southern colleges, and it is from these that Georgia gets her doctors, or the greater part of them. The science of medicine has made such progress within the last few years that it is no longer possible for a student to obtain a reliable medical education in two courses of study. This is a fact which no one will deny unless he be one of those who worships the commercial ideal in medical teaching. The schools of the North, for the most part, in spite of every facility of laboratory and hospital, require of their students a preliminary education and three or four terms of study and observation. But we of the South exact no previous preparation, and undertake in two ungraded courses of lectures of five months each to make doctors of those who come up from the farms. In medical education the proper solution lies in the application of the Malthusian principle: "Fewer conceptions and a prolonged period of gestation." As it is, we are having a premature delivery of young doctors every spring. They come—

> Deformed, unfinished, sent before their time
> Into this (medical) world, scarce half made up,

and there is nothing to stand between them and the people among whom they choose to locate. One of those men once said that the foramen magnum transmitted the arch of the arota; another, that in post-partum hemorrhage he would ligate the post-partum artery; another, that for œdema of the glottis he would amputate in about two weeks; another, that rectocele was an inflammation of the cele of the rectum; another, that pyelitis was an inflammation of the pylorus; another said that the endothelium was a worm

generally found in the rectum; another, that in "hypertrophy of the heart we have a full cavity, while in dilatation we have a reservoir full of gas." In the hands of such persons the lives of the people are not safe, and there is properly no place for them in the medical profession; but some of these very ones, or their equivalents, are now practicing serenely in Georgia.

I am glad to say that an attempt has been made to correct this state of things. The Southern Medical College Association was organized in Louisville last Fall for the purpose of "elevating the standard of medical education by requiring a more thorough preliminary training and an increased length of medical study." Certain qualifications for matriculation were agreed upon and the three-term course adopted. But now what do we see? Every Southern college, except one, entered cheerfully into the spirit of this Association, anxious to place the status of medical education upon a higher plane in the South. The only one that refused is a Georgia college, located in Atlanta, and to it now belongs the inglorious distinction of being probably the only school in this country that insists upon adhering to the old system. The refusal of one college may nullify the desires of all the rest. If so, the cause of higher medical education must languish in the South; the two-term system must prevail; and the colleges must continue to confer diplomas without giving an education; all because "Ephraim is joined to his idols" in Atlanta.

Every possible objection is going to be urged against the passage of this bill by those whose interest it is to oppose it. The regular, irregular, quack and legal affinities above alluded to will labor with one accord for its defeat. Our esteemed eclectic cousins have on their war paint and are already in the ring. The clans gathered in February last and selected a "strong committee" to "present to the next legislature the protest of their State Asso-

ciation against the passage of this bill." We are assured that this committee "will not be idle"; that the "eclectics of the State are thoroughly organized, and, in the event that the dominant school insist upon securing this legislation, will be on hand in force when the legislature convenes."

As a substitute for this bill the eclectics will propose a law requiring the medical colleges of the State to adopt the three-term course, and not admitting any one to practice in the State who cannot present the diploma of a three-term college. That is just exactly what the present bill will require, but evidently that is not enough. A man's fitness for practice is to be judged not by the length of time he has spent in college, but by what he has learned there. The people don't inquire how long a student has attended lectures, and they don't care; but they do want to know if he is competent, and that can be determined only by a personal examination. Moreover, by the proposed substitute the colleges would still grant licenses while conferring diplomas, the very condition which fosters looseness and inefficiency in medical instruction.

Our brethren of the vegetable persuasion will insist further that, if there is to be an examining board at all, there should be one for each school of medicine represented in the State. There are two hundred eclectics in Georgia and twenty-five homeopaths. With only this numerical strength these schools can not maintain efficient examining boards. The strength of the combined boards would be only the strength of the weakest, and such an arrangement would give little protection to the people. After all, there is but one science of medicine. There are differences between the schools on general principles of treatment, but we all have one anatomy, one practice, one surgery and one obstetrics. Wherever these mixed boards are made up of reputable and intelligent practitioners, united upon a com-

mon purpose, there is no friction. Mixed boards are now operating smoothly in Minnesota, Iowa, Montana, Missouri, North Dakota and other States. The secretary of one of these says "that they render better service to the public than is done in the few instances where separate boards have been created in compliance with the demands of the several schools of practice. In the States possessing mixed boards that conscientiously perform the duties of a public servant I have yet to hear of any clashing or jealousy among the members thereof."

It will be alleged that this bill is unconstitutional. This old argument, which has done duty in many a weak cause, will be brought out again. But when, in the name of law and morals, did it become unconstitutional for a State to protect the lives and health of its citizens against ignorance and fraud? The general government does not find it unconstitutional to exact the most rigid qualifications of its army, navy and marine surgeons in order that our soldiers and sailors may receive only the best medical attention. It is constitutional for us to establish certain standards of qualification for steamboat pilots and engineers in factories, mills, public and private buildings, etc., in order that the lives and property of people may not be endangered. We require that our lawyers and drug clerks be examined in order that the incompetent may be excluded; nothing unconstitutional about that. We have laws for the prevention of cruelty to animals; there are laws for the protection of our game; the law protects the buzzards of the air, and the terrapins in our mudholes; and all these are regarded as beneficent and constitutional. But when we ask the State to pass a measure which will protect its citizens against illegal and unqualified practitioners of medicine and surgery, a cry is raised by some who appear really to believe it, and others who are paid for it, that this would be unconstitutional.

The *Journal of the American Medical Association* says: "In view of the important interests committed to the charge of the physician, the necessity that he should possess the necessary qualifications of learning and skill is so great, and his want of them likely to be attended with results so injurious to health and destructive of life, that the power of the State to enact such laws regulating the practice of medicine and surgery as are calculated to exclude and protect the people from ignorant pretenders and charlatans, has been established by repeated adjudications, and is now too firmly settled to admit of doubt."

The "unconstitutional" theory does not work. State after State has rejected it. The Supreme Court of Kansas has ruled (44 Kansas, 565): "The power of the legislature to regulate the practice of medicine, dentistry or surgery is undoubted." The constitutionality of the Nebraska act has just been tested. (*State vs. Wo.*) The State argued: "We find on comparing this act with similar acts in other States that according to the decisions of those States, and according to the decision of the Supreme Court of the United States, the act is not unconstitutional, but is valid in every particular. It is of the utmost importance that all men lacking in skill, learning and honesty should be excluded from the profession. The tendency of legislation has always been to secure this result. Every effort by the legislature to protect and preserve the lives and health of the people of the State should be looked upon with favor by the courts." The decision of the supreme court was an indorsement of this position. When a test case (from West Virginia) was taken to the United States Supreme Court, Justice Field ruled (129 U. S. 114): "The power of the State to provide for the general welfare of its people authorizes it to prescribe all such regulations as, in its judgment, will secure, or tend to secure, them against the consequences of ignorance and incapacity, as well as of

deception and fraud. . . . No one has a right to practice medicine without having the necessary qualifications of learning and skill; and the statute only requires that whoever assumes, by offering to the community his services as a physician, that he possesses such learning and skill, shall present evidence of it by a certificate or license from a body designated by the State to judge of his qualifications." Similar decisions have been rendered by the Supreme Courts of Illinois, Michigan, California, Mississippi, Ohio, Alabama, Iowa and West Virginia.

The establishment of these boards in all parts of the country is no longer a piece of experimental legislation. They are now operating successfully in twenty-four States, one territory, and even among the Cherokee and Choctaw nations. They have demonstrated their usefulness wherever they have been tried, and no State in which the system has been properly conducted has ever abandoned it. In a certain county of one State it is said that no one can be elected to the legislature who is in favor of any interference with the medical practice act. But let us take the evidence:

Dr. Perry H. Millard, St Paul, Minn., says: "The (present satisfactory conditions) in this State are wholly due to efficient legislation, and the result of the act has been to enhance the welfare of both the profession and the public." Dr. J. M. Hays, ex-secretary of the North Carolina Medical Society, says in a private letter: "The effect of our medical license act has been exceedingly marked for good. When I say that for eight years about one-third of all applicants for license have been found to be unqualified, it is very manifest what the public has escaped. The intelligent public in North Carolina gives our State law its earnest support, and if there has ever been a murmur of dissatisfaction with its operation from any source it has come from some one totally unfit for the practice of medicine, who aspired to obtain license and failed." In Vir-

ginia Dr. R. W. Martin, ex-president of the State Medical Society, says: "The law has protected the unsuspecting citizens of the commonwealth both from the money-getting quackeries of cheats and adventurers, and the injudicious though honest efforts of unqualified doctors. The public recognizes the fact that this law has brought protection, and physicians are frequently congratulated on the improvement that has taken place. The State is almost clear of frauds and impostors. The young men entering the profession have been stimulated to higher and nobler aims. The medical schools are doing better work; they are making greater effort to prepare their graduates to meet the requirements of the law." A private letter from Dr. Michaux, the present secretary of the Virginia board, fully corroborates these statements. The New York *Medical Record* (January 28th) testifies that "in those States in which the legal regulation of medical practice has been adopted, good results have followed. The people have been insured to some extent against quackery, and no one's just rights have been encroached upon. The laws have been for the benefit of the people." The *Journal of the American Medical Association* (February 18th) testifies that "wherever such boards have existed they have been of value not only to the State in affording protection to the people from charlatans and unqualified practitioners, but such boards have exercised a most valuable influence in elevating the educational standard of the medical profession."

Let me say in conclusion that this bill is fair, liberal and impartial, and free from reasonable objections. Those who framed it have sought for no favors for themselves or their school of medicine, nor asked for any discriminations against others. The selection of the board is entrusted to the judgment of the governor, with no restrictions except that the different schools are to be represented approximately in proportion to their numerical strength in the State.

The bill defines itself as seeking to "protect the people from illegal and unqualified practitioners of medicine." It seeks to secure for the people only such physicians as are competent to practice their profession. That is all the people want, and they are certainly entitled to that much. If Georgia would like to furnish her citizens with this security; if she would like to divorce the right to practice medicine from the empty honor of having a diploma; if she would like to bring about higher standards in her medical schools and stimulate her students to higher aims; if she would like to improve the *personnel* of the medical profession in the State and endeavor to make it what it should be, an intelligent, honest and conscientious body of physicians; then let there be established a Board of Medical Examiners who shall be untrammeled of any college connections, and who shall determine whether a given applicant is qualified to practice medicine in Georgia.

For discussion see page 389.

THE PRACTICE OF MEDICINE IN GEORGIA.

BY ARTHUR C. BLAIN, B. C. S., M. D., MACON, GA.

It is my purpose to-day to call your attention to the laws or rather the want of laws, governing the practice of medicine in this State. Now, it is simply necessary for a man to have a diploma from a chartered medical college, and register the same with the clerk of the superior court in the county where he expects to practice. In the majority of cases, I venture to say that you could have any kind of diploma written in Latin, and tell the clerk that it is your medical diploma and he would readily register you; thus giving the full sanction of the law to frauds, quacks and ignoramuses, who may have gained the sanction of some mercenary college faculty, who certify to their fitness to practice the healing art when they are about as much fitted for it as a horse is for an undertaker. In fact, while the quacks and frauds are usually men of sufficient sense to use only such remedies and other measures as are perfectly bland, the latter class, who have only a smattering knowledge of medicine, are liable to do damage to the community that is unfortunate enough to be imposed upon by them:

> "A little learning is a dangerous thing.
> Drink deep, or taste not the Pierian spring."

Now let us place ourselves in the shoes of the public, who are not competent to judge of the learning of the physician and have to rely solely upon the license of the individual, and the (I am sorry to say it) too often empty title of Doctor of Medicine. Just suppose, gentlemen, that in an

emergency obstetrical or surgical case you were to call in one of these, because he happened to be the first doctor you could find (or probably the only one), to attend your wife, mother or sister in a life and death case, and probably too late find out your mistake; would you not censure the laws permitting such impostors to practice among you? I say without hesitation that you would.

We, as true physicians, are derelict in our duty if we do not awake and bestir ourselves in an effort to remedy this great defect; and we can only accomplish this end by a continued and united struggle to place this matter in its proper light before the legislators, and when they once understand the enormity of the evil, I venture to say that the required legislation would not long remain wanting. Let us turn to the Code of Ethics and refer to the duties of the profession to the public. Chapter 3, article 1, section 4, says: "It is the duty of physicians who are frequent witnesses of the enormities committed by quackery, and the injury to health and even destruction of life caused by the use of quack medicines, to enlighten the public on these subjects, to expose the injuries sustained by the unwary from the devices and pretensions of artful empirics and impostors," etc. Let us labor to follow this mandate by gaining statutory enactments which will prevent these impostors.

In this country where liberty is confounded with unbridled license; where justice is often an article of merchandise; where science is used as a cloak to cover ignorance; where, in short, quackery, humbuggery and criminality flourish like vegetation in the tropics; in such a land what we need are proper laws for the protection of the people, as well as ourselves. Laws that, while recognizing and protecting the rights of all educated physicians without regard to their creeds or modes of treatment, would effectually uproot and weed out the whole line of quacks, abortionists, faith-curists and ignoramuses, who know as little about the

practice of medicine and attributes of a true physician as they do about the world to come.

We want medical laws that discriminate in favor of the true men of science and integrity, and against the empiric and impostor. Such laws are essential to public health and safety.

In the absence of any further law in our State, it would be far better were our medical diplomas written in plain English, so that the clerks in our courts who do not happen to be extra good Latin scholars could not be gulled by bogus diplomas.

Let our laws be founded on the motto of our State, Wisdom, Justice and Moderation; although I would not insist on a too close adherence to the latter.

Now the remedy for the existing evil is the passage of the proper legislation regulating the practice of medicine in Georgia and creating a State Board of Medical Examiners. The dentists of our State have a similar law, and why should we, whose knowledge or ignorance may save or destroy human life, be debarred? It is a blot on the face of our State that she has no such law, when her sister States are protected; and Georgia is made a dumping ground for all who fail to pass the requisite examination to obtain a license to practice in Virginia, Florida or Alabama.

The time is ripe for such legislation, and I repeat that we must work constantly and in unison to obtain the desired end, remembering that the constant dripping of water will wear away the solid rock; and I believe that when the enormity of the situation is properly brought before our legislators, that they will not long permit this stigma to remain upon the Empire State of the South, and she will no longer be an asylum for quackery and all medical impostors.

I have before me reports for 1892 from the examining boards of Alabama and Virginia, showing that out of six hundred and forty-seven applicants eighty-eight were re-

jected as unfit to practice in those States. Now of course our State was a natural dumping ground for these abortions. I also regret to see from these reports the unfavorable showing made by some of our Georgia colleges. In Virginia the only graduate from the Atlanta Medical College who applied was rejected, and two applied from the Southern Medical College and both of these were refused license.

The following shows the percentage of rejections in Alabama: Southern Medical College, fifteen per cent.; Medical Department of the University of Georgia, twenty-five per cent., and Atlanta Medical College, thirty-three per cent. It is sadly to the discredit of our colleges that the board in another State should declare so many of their graduates unfit to practice within her borders.

State boards not only afford protection to the people from charlatans and unqualified practitioners, but exert a salutary influence towards elevating the educational standard of the medical profession.

We would do well to copy to a great extent the excellent law of the State of Minnesota, which, I believe, is conceded to be the best in the union, taking care to make the board non-partisan, and inserting a clause making all professors in medical colleges ineligible, thus freeing it entirely of all bias in favor of any medical college. Mixed examining boards are also objectionable; better to have separate boards of seven each, a board of regular physicians, of Homeopaths and one of Eclectics, as is the case with the present law of Maryland. More than two thousand M. D.'s are now graduated annually in our country, while even now there is one doctor for about every six hundred souls in the union. Diplomas are now issued too freely to make them of very great value in the estimation of the public, and are not received as evidence of their owner's competency,

either by the army or naval examining boards, or even by State licensing boards.

The doors of the Æsculapian temples hang too much ajar and invite all to rush in; however, I am glad to note the tendency of many of our medical colleges to raise the requirements both for entrance and graduation.

It would be a wise move on the part of this association to send a committee to Atlanta during the next session of the legislature to assist in formulating and passing some good law that would meet the requirements of the case. I believe it would be a good idea, were it possible, to pass a law making it compulsory upon every regular physician practicing within this State to become a member of the Medical Association of Georgia, constituting our Board of Censors the State Board of Examiners; and all who failed to pass the necessary examinations on anatomy, physiology, chemistry, pathology and practice, obstetrics and gynecology, materia medica and therapeutics and surgery would be debarred from the society and consequently from license to practice in the State. There is still one other matter to which I wish to direct your attention, and like the foregoing, it, too, requires creation by our lawmakers. I refer to a State Board of Health.

Let us again turn to our Code of Ethics and see what we can find there touching this subject. Chapter 3, article 1, section 1, says: "As good citizens, it is the duty of physicians to be ever vigilant for the welfare of the community, and to bear their part in sustaining its institutions and burdens; they should also be ever ready to give counsel to the public in relation to matters especially appertaining to their profession, as on subjects of medical police, public hygiene and legal medicine. It is their province to enlighten the public in regard to quarantine regulations, the location, arrangement and distances of hospitals, asylums, schools, prisons and similar institutions; in relation to the medical

police of towns, as drainage, ventilation, etc.; and in regard to measures for the prevention of epidemic and contagious diseases; and when pestilence prevails it is their duty to face the danger, and to continue their labors for the alleviation of the suffering, even at the jeopardy of their own lives."

Our duty to the healthy is as great as to the diseased. Indeed, the protection of the public health is of far greater importance than the well-being of any individual. I have carefully examined the bill introduced at the last session of the legislature by Judge Mershon, of Glynn county, entitled "An act to create and maintain a State Board of Health," and find that this can be made an excellent measure by a few changes. I understand that the objection urged against it at the session was that the bill gave the health officer too much authority, when in my opinion that is the most important feature of the measure, for if the health officer does not have the necessary authority to act quickly, he will be a mere figurehead.

Let us have a committee who will urge the passage of this or some similar measure, using all the powers which they possess to engineer it through. Some of you may urge that a few years since our Association had a similar committee which failed in its objects, and therefore it would be useless to appoint another, but I say let us follow the schoolboy's lines: "If at first you don't succeed, try, try again." Besides, I think now we have a far more intelligent legislature than we had then. The time seems to be a propitious one now, from the danger of an outbreak of cholera in this country at any moment.

May we be able to wield the desired influence over our lawmakers, and if these remarks tend in any way to assist in awakening our populace to the urgent necessity of such laws, I will consider my time well expended.

STATE AND MUNICIPAL HYGIENE, WITH A PLEA FOR A STATE BOARD OF HEALTH AS WELL AS FOR AN EXAMINING BOARD.

BY JAS. C. AVARY, M. D., ATLANTA, GA.

Cholera has been the agent of more good sanitation than any other one cause. The recent simultaneous effort to "clean up" in every town, city or hamlet is the most notable and significant event in modern hygiene. So declares Dr. Lindsley, Secretary of the State Board of Health of our tidy New England sister, Connecticut.

Dr. Joseph F. Edwards, who is Foreign Associate Member of the French Society of Hygiene, and member of the State Board of Health of Pennsylvania, and to whose practical and scientific journal, *Annals of Hygiene*, I am largely indebted for the inspiration and data of this paper, quotes Dr. Lindsley as above, and eloquently adds: "The great apostle of hygiene in this reformation is the cholera. Cholera is a practical preacher, and demonstrates its doctrines by its works. Wherever it finds a people disregarding the lessons it has taught before, it wastes no time in argument, it simply kills them." Europe and America both have had repeated teachings of this sort, and are wise in making the lessons practical. It is to be hoped that they will not be too tardy or two negligent in obeying the behests of this uncompromising, arbitrary and pitiless instructor in nature's laws of health.

Cholera has been very aptly called the great sanitary inspector of nature. When gregarious man too openly defies the laws of health, and wantonly falls into beastly

habits of filthiness, the cholera starts on its inspecting tour, and inculcates the laws of healthy living with a decision and emphasis that is best measured by the graves it fills. It is the author of sanitation, and, notwithstanding the destructive energy with which it acts, it has been a benefactor of the human race, having saved more lives by the reforms it has produced than it has destroyed; as Krupp's great guns, by their very deadliness, have made war well nigh impossible.

Since cholera occupies so important a relation to modern hygiene, it might not be amiss or uninteresting to glance at the history of this disease as connected with ourselves. Its first appearance in America was in 1832. In June of that year it appeared in Montreal, Quebec, and New York City. It radiated thence along the lines of travel to our other large cities, and did not leave us for a period of four years. In December, 1848, it reappeared in New York, and spread with swiftness and power into the other States. It raged among us during 1849, '50, '51, '52, '53, '54, and not until '55 did our unwelcome guest leave us for the time being.

On November 3d, 1865, the steamship Atalanta, with five hundred German emigrants on board, sailed into New York bay with cholera on board. Immediate quarantine precautions were taken, and we escaped the scourge. But in the following spring, cholera appeared in New York and followed its previous line of travel, abiding with us through 1867. In December, 1872, cholera came to look after us again, and continued through the year 1873. In 1887, and in 1892, cholera knocked at our gates again, but found them barred by the wisdom and firmness of the health officers of New York. We remember that it was hard work for them last summer, but they knew what to do, and they did it.

Cholera is no longer a mystery as in the past, but a

germ disease, thoroughly understood and capable of easy destruction and control under proper quarantine and sanitary regulations.

Dr. Geo. M. Sternberg, the Deputy Surgeon-General of the United States Army, who is considered a high authority upon this subject, assures us that the cholera germ is one of the most easily destroyed of all known germs. We are assured that a few hours' exposure to dry air is sufficient to destroy it, and that 140° F. may be relied upon to kill it.

The combined experience and aggregate testimony of those who have battled with cholera in hand to hand fight give us the following simple rules as all that are necessary to prevent the spread of cholera among us, even if it should enter our doors.

1st. Isolate all drinking water—that is, guard it from all chance of infection by germs. In addition to this precaution, boil all the milk and water that is to be drank; eat simple and wholesome food, thoroughly cooked.

2d. Let all fecal and other animal discharges and all suspicious garbage be destroyed by quick-lime, or consumed by fire.

3. Let all suspected clothing, and furnishings be disinfected with dry heat at 212° F., and afterwards with steam, and where it seems advisable see that such things as cannot be thoroughly disinfected are destroyed by fire.

4. Let all cholera corpses be cremated.*

*In times of great epidemic diseases cremation should be considered an entire necessity.—*Rudolph Virchow.*

What possible good can there be in burning clothes and furniture if the infected flesh be allowed to remain in existence? In 1868 there was a dreadful epidemic of yellow fever in Lima, Peru, as many as three hundred cases dying daily. Dr. Le Plongeon urged the cremation of the dead. Finally an arrangement was made by which large fires were kept on the trenches filled with corpses. At once the plague abated and soon died out.—*Letter by Alice D. Le Plongeon.*

Numberless instances like this might be cited from authorities whose weight is especially recognized among ourselves. In typhoid fever,

I have given these rules in full, because they are as applicable to every other contagious disease as to cholera, and should be in force all the year round in every city and village and in every rural district.

Dr. E. O. Shakspeare, United States cholera commissioner and late port physician to Philadelphia, who is conceded to know more about the ways of cholera than any other one man in the world, assures us that cholera, if it follows its past precedent, will invade us this summer. I am anxious that all boards of health should stand ready girded for combined and intelligent action against its invasion. But I am more anxious that every organization of this kind should awake and keep awake to its duty of destroying those diseases which are endemic among us and which should not be so. While cholera comes among us now and then and kills its thousands, typhoid fever is with us the year round and kills its tens of thousands. Diphtheria, scarlet fever and cholera infantum are all products of filth, and they are never entirely absent from our midst.

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diphtheria, scarlet fever, etc., cremation of the infected corpse is as important as in cholera.

A young man died from diphtheria and was buried in the village churchyard. At some little distance was a well from which the people drank each Sunday. Was it not suggestive that twenty from this congregation died from diphtheria, while this well was in use?"—*Wm. Porter, M. D., St. Louis, Mo.*

Some persons who had died of scarlet fever were buried in a country graveyard; thirty years after the cemetery was included in a neighboring garden and the old graves dug up. Scarlet fever forthwith broke out in the rectory and parish.—*Sir Spencer Wells.*

On a Friday in July a lady was buried by her request in a vault of the church. On Sunday following, while the Lord's supper was administered, this vault was uncovered. Of the one hundred and eighty communicants, sixty became ill before leaving church, and some died. The sexton and others were arrested on charges of poisoning. The city authorities ordered a chalice of wine to be left uncovered on the altar. In less that an hour numberless insects were noticed in the wine and were traced by means of sunbeams to the lady's grave. This was fourteen days after interment.—*Dr. Adelbert Kneitlinger.*

The burden of all information on the subject shows that safeguards against visitant and endemic plagues may be summed up in the one word *cleanliness* in living as correlative with *asepsis* in surgery.

Public teaching in school and press and through boards of health should make a health officer out of every railroad and sleeping-car conductor, every school teacher, every preacher, every janitor of a public building; and children in public and private schools should be taught by text-books and practical demonstration the principles of asepsis in living. Our food supply should be guarded by careful and strict legislation—especially that of infants. The Herod of uncleanliness will go on mortifying innocents in our midst as long as our babies die of cholera infantum. The milk supply should be protected in every State and every subdivision of every State by the milk test which shows the food value of the milk to be unimpaired by the addition of water or the subtraction of cream, together with the laboratory test which searches the milk for germs of disease which may be found therein. In addition to these, and more important still, we must have dairy farm inspection. Every physician, every legislator, every man who is the father of a helpless baby, should take it upon himself to see that we secure by legislative enactment a skillful, efficient and honest inspection of dairy farms and of all places where a cow is milked, or milk is sold on tap or distributed in any way. The inspector's duty should be to see that cows are fed, watered and stabled in a clean and wholesome manner. In case of contagious sickness in the dairyman's family, he should isolate the sick and protect the milk or forbid its sale. The State, through her board of health, should distribute from time to time pamphlets of information and instruction to dairymen and to all people engaged in the milk industry. To practice any branch of this industry a license should be required. The State

should inform those engaged in the production, distribution or sale of milk, through pamphlets prepared by the State board, of the necessary requirements to secure such license. This license should be forfeited and a heavy fine imposed in consequence of the violation of some of these requirements or laws, such, for instance, as selling the milk of a diseased cow.

In regard to drainage in the rural districts, the public must be educated through the press, the ministry and the county boards of health. Such boards have duties whether they recognize them or not, and whether they are or are not paid for exercising them, they should be aroused to a sense of their responsibilities. If a physician in every rural district would write now and then an article for his local paper, calling attention to matters of hygiene as neglected by his constituents, and would talk hygiene from house to house, great good would be accomplished although at first it might seem a thankless task.

That typhoid fever is so often found in mountainous districts is due to the fact that typhoid excreta has been drained in some way into the drinking water. Few doctors now believe that typhoid fever poison enters the system through any other source than by the germs which pass through the mouth and stomach, and generally these germs gain entrance there by getting into the water drank. Of course they are not born and propagated in pure water, but being in the excrement of some patient suffering with this disease, they are thrown upon the surface of the ground that washes into the spring or empties into a sink which connects with the well in some way, or is carried off by the sewer to a river miles away to be taken up into the reservoir of some town, and from there imbibed by some innocent municipal father or member of the board of water commissioners to propagate its kind in his intestines at the expense of his vitality.

Dr. Welch, of Baltimore, in the January number of *Annals of Hygiene*, says: "The famous Millbank prison of London was frequently the center of severe epidemics of typhoid fever so long as the water supply was drawn from the Thames river, as it flowed past the prison, but after the supply was taken from an artesian well, only three cases occurred in eighteen years. This change of water supply was carried into effect in the midst of a severe epidemic of cholera, and in six days afterwards that disease suddenly ceased in the prison."

The outbreak of a contagious disease anywhere means that a heavy crime against sanitation has been committed. In every case it means that drinking water has been polluted; it means bad sewerage; sometimes it means polluted food, especially polluted milk supply, and maybe polluted air. Proper sanitation persisted in would render the diseases which I have named things of the past.

The tendency of the people and of the legislative powers to think that boards of health, especially State boards, are organized only for epidemic and visitant scourges, is a matter to be deplored and to be corrected. Side by side with cholera as a reformer stand yellow fever and smallpox, and the lessons which they have taught us ought to be applied with profit to these internal and endemic scourges which I have cited. I believe that the history of each and every board of health would show that such board was the crystallization of public sentiment under the whiplash of an epidemic scourge.

Thus the act of Congress of March 3d, 1879, creating a National Board of Health was the direct offspring of the yellow fever scourge of 1878 and 1879.

In 1891 the records show that the National Board of Health, while not abolished, was not in active operation, Congress having for several years discontinued the appropriation necessary to sustain it.

On March 27th, 1892, there was an act passed for preventing the spread of contagious diseases between the States. This act, in case of emergency demanding prompt action, constituted something like a Board of Health for the time being of the President, the Secretary of the Treasury and the Surgeon-General of the Marine Hospital, for the purpose of temporary quarantine between the States.

Thus, the history of our National Board of Health shows plainly that its existence and its every movement is only for quarantine in cases of epidemic scourge; that is, only for the purpose of meeting occasional and not continual evils, outside and not internal foes.

The question of sewerage and of the preservation of the water supply from pollution is one and the same. Sewerage does not annihilate filth or germs of disease; it transfers them from place to place.

The destruction of germs of disease in night-soil, noxious garbage, etc., before it has a chance to reach and pollute any water supply whatever is the end we should try to bring about. I have been turning this matter over in my brain ever since my first connection with the health department of the city of Atlanta, when my earliest insight began into the real difficulties of the question. The solution I have reached is this:

That in every house in town or country there should be an arrangement by which all animal dejecta and noxious garbage should be destroyed in hermetically sealed furnaces connected with chimneys of said house; or better still, some chemical agent might be used as the destructive or consuming power at the place of first deposit.

I hope this idea will be proved feasible at an early date. I would be glad for some inventive genius to make his fortune and serve humanity at the same time by constructing an apparatus by which all noxious matter could be destroyed along some such line as I have indicated, at a minimum of

private cost, and without public expense. Such destruction of all doubtful or poisonous matter at the point of deposit would solve the vexed questions of sewerage, of unpolluted water supply, and of that monstrous hygienic difficulty: What shall we do with garbage and night-soil?

How sweet and beautiful and comforting a thought it would be, that man would never be poisoned again at the fountain of life and in the streams of refreshing water, when these questions of water-supply, of sewerage, of night-soil and garbage are solved as they should and can be solved; and they should be solved quickly by science and legislation, hand in hand, so that endemics as well as epidemics will be no more.

Perhaps the greater number of this body is unacquainted with the fact that by an act of the legislature on February 25th, 1875, a State Board of Health was provided for, and that by an amendment the following year each county was given a local board; that fifteen hundred dollars was set apart for the State Board's maintenance, when it was first created; that the two subsequent sessions of the legislature of '76 and '77 also made an appropriation of some insignificant sum. But since the good year of 1877—sixteen years ago—the State Board of Health of Georgia has sweetly slumbered, for want of an appropriation by the legislature.

It gives me pleasure in this connection to refer to the last message of his Excellency, Governor Northen, to the General Assembly, in which he says: "I beg to call the attention of the General Assembly to the necessity for a State Board of Health," and then goes on to cite the several urgent and imperative needs of the State for such a body.

Just previous to my departure for Americus I called upon Governor Northen to know the status of legislation pending at the close of the last session of the legislature,

and found him thoroughly alive to the necessity of a State Department of Health and of proper legislation on the subject. His patriotic and humanitarian interest in the matter is clearly shown in the message he sent to the legislature, which I here quote:

"It will be remembered that last year there was an epidemic of smallpox on the strip of coast known as Harris' Neck, and the State, powerless to rescue or protect her own citizens, was forced to call on the general government for aid. This aid was granted and the disease was promptly checked and eradicated. It would have been more consistent with the dignity of the State and the duty it owes its citizens if Georgia could have taken steps to protect her own people from the scourge. It would also have been more in harmony with our ideas of local self-control. The threatened visitation of Asiatic cholera to this country reveals to us another peril against which we should provide ample means of defence. We may any year be subjected to the invasion of yellow fever from the Spanish countries to the south of us, or of Asiatic cholera through the northern ports. We are now utterly helpless to deal with these plagues, and should either menace us we should have to appeal again to the Federal government. Besides these dangers from without, we have many sources of danger within our borders, and an efficient board of health would be a constant safeguard to the health of our people and afford a feeling of security against epidemic and disease.

"I most earnestly recommend, therefore, that the General Assembly take such action as will reëstablish the State Board of Health, and provide for its maintenance and efficiency."

He assured me that the State Medical Association would have his hearty coöperation in securing such legislation as would make the State Board of Health a live and active institution of the State.

DISCUSSION ON THE PAPERS OF DRS. GRANDY, BLAIN AND AVARY.

Dr. C. D. Hurt, of Atlanta, opening the discussion: I am very glad indeed to see the interest which is manifested to-day in the discussion of medical legislation. It is apparent to every physician who has been endeavoring to keep up with the science of medicine that something must be done to regulate our practice in this State. One great difficulty or obstacle in the pathway of our profession has been the fact that this State has been flooded by migrating characters who are totally incompetent and unfair in their methods of procedure. They come into our cities and small towns with the hope and purpose of making a livelihood, regardless of the results upon humanity or the sick, or those who imagine that they are sick. I think it is now time that we should take some action in regard to this matter and bring it before the legislature. In order to do this the medical profession of the State and the members of this Association ought to be united. Our Association ought to take some decided action in regard to it, and by discussing the matter here and with medical men scattered over the State at large and conferring with the laity and members of the legislature, which convenes next October, I think the question can be thoroughly adjusted, and we will find that our legislature will be ready to take prompt action. I believe the opposition which has been presented to a former legislature from some schools of medicine, conspicuously represented in the State, will not amount to anything if we ourselves are united. I would like to make a motion that the chair appoint a committee of one from each congressional district to take charge of medical legislation. I am heartily in favor of it, and I believe this Association, if a vote was taken, would be

largely in favor of the adoption of a State law constituting a State Medical Examining Board, and, as suggested by some one, I do not see any reason why the Board of Health should not be practically the Examining Board, why the two may not be combined in one. The tendency of the profession is to encourage a measure of this kind. A short time ago I had a talk with Mr. Smith, who introduced the bill into the Senate, and he said the principal difficulty was that the professions or different schools of the State of Georgia were not united in sentiment in the passage of a law. I believe action from this Association would assure the members of the legislature of our desire on that point, and that the bill would pass without difficulty.

Dr. R. O. Engram, of Montezuma: I heartily indorse what Dr. Hurt has said. I introduced a resolution to have this committee appointed. As has been said, one of the difficulties with the legislature, especially with the Committee on Hygiene, was that the members of the legislature did not know how we stood. We went there disunited on the subject. I am glad this discussion has come up and that papers have been read, in order to get an expression of opinion from the members of this Association as to what they desire. The particulars of the bill pending, which will be called up at the next session of the legislature, provides for a Board of Medical Examiners, which allows two other schools to have representatives on it. Dr. Grandy, in his remarks, led me to believe that he favored that kind of a bill, while Dr. Blain seems to think it would be better to have a board of examiners for each school, the homeopaths, eclectics and our school. I would like to hear an expression of opinion as to whether or not there should be a union of the three schools as mentioned in the bill regarding the Medical Examining Board; whether, when this committee go before the legislature, they shall recommend three separate boards for three separate schools.

There is no question but that the members of this Association desire medical legislation.

Dr. Willis F. Westmoreland, of Atlanta: It strikes me that one of the strongest points in the bill is to remove from the Board of Medical Examiners any man who has any connection with a medical college. In every court of law a judge who is in any way interested in any case is precluded from presiding in that case. We will encounter difficulty in the passage of our bill as long as the different schools employ attorneys to go before the legislature in person to defeat it, because members of the other schools are naturally taken as representatives of the profession. If, however, the different schools of medicine will go in a body and advocate the passage of the bill, there will be no difficulty in passing it.

Dr. W. H. Elliott, of Savannah: I rise to give my indorsement to the appointment of a Board of Medical Examiners for the State of Georgia that shall be entirely disconnected with any medical college. If such a board is not appointed, the most popular college is apt to be the one where diplomas can be gotten the quickest and easiest. As long as the members of the Examining Board are disconnected with any medical college, the best college will not be the one where students will get through the easiest, but the one that will better prepare them to stand a rigid examination. I have always felt that if we could adopt in this country the English method of granting diplomas it would raise the standard of medical education better than anything I know of. There you apply for a diploma to the Royal College of Physicians and Surgeons, the only body in England authorized to give it. Before a man appears before that body he must have studied four years. There are twenty-one examiners, who by law cannot be connected with any medical school. When a man passes his examination before this body of twenty-one men and

gets a diploma, it not only means something, but he is fit to practice.

Dr. F. W. McRae, of Atlanta: I am as intensely interested in the passage of a law regulating the practice of medicine in Georgia as any member of this Association. Dr. Baird is chairman of the committee appointed by the Atlanta Society of Medicine. Dr. Grandy has alluded to the bill which is now pending before the legislature. Personally, I think it would be little less than a misfortune for a representative of any medical college to be a member of the Examining Board, and that was purposely avoided in drafting the bill.

As to one other provision in the bill not alluded to, I will say that a third requirement is, in case the bill becomes a law, that the students of any college which only requires two courses of lectures shall not be eligible to apply for a license to practice; in other words, they cannot go before the Board of Medical Examiners after the active operation of the bill unless they are graduates of colleges requiring three courses of lectures of six months each, taken in separate years. Everything in this direction should receive the encouragement of this Association.

At a meeting of the Southern Surgical and Gynecological Association in Louisville a representative was sent by a number of medical colleges in the State, and Dr. Westmoreland was one of those representatives, and a College Association was formed.

I know of nothing that was done at the meeting of the committee, except what has been published. After that College Association was formed, immediately notices were sent out to the colleges requesting a concurrence of action looking to the formation of a Southern College Association. I do not remember the exact terms of preliminary education, but, a three years' course of six months each is required, each course taken in separate years with bacteriological and

chemical laboratory work, as well as operative surgery, etc. The colleges of the South have entered into that agreement. Every one has signed his signature to the articles of agreement, and all, so far as I understand, are heartily in favor of it with one exception, the Atlanta Medical College.

I most heartily indorse all the suggestions which have been mentioned, except the one by Dr. Blain in reference to three Medical Examining Boards. I think we would be exceedingly unfortunate if that suggestion is carried out. With one Examining Board, composed of representatives of different schools, there would be perfect fairness given to every one who presents himself for examination. The examination would be the same for the graduates of different schools, except in materia medica and therapeutics, and the homeopathic and eclectic members of the board could examine graduates of their schools in these particular branches themselves. There is no reason why the bill should not pass. There is no individual opposition that could defeat its passage if the Medical Association of this State and its individual members are in favor of its passage. It seems to me that if each member of this Association will speak to his legal representative, and get up a petition from men residing in his county, there will be no difficulty in passing the bill now pending before the legislature.

Dr. M. B. Hutchins, of Atlanta: Personally I am unable to see what special difference it makes in joining the Association of Southern Medical Colleges, if we can get the bill now pending before the legislature passed. It is known that the president of one of the southern colleges has been most active in fighting the passage of this bill.

Dr. McRae: The reason the gentleman referred to by Dr. Hutchins objects to the bill is, that he was unwilling for Georgia colleges to be forced into a three years' course unless other colleges were. Since the College Association has been formed he has been working for the bill.

Dr. Hutchins, resuming: It seems to me the Association of Southern Colleges has nothing whatever to do with the question. It is simply a matter between two or three colleges. There are no laws or rules governing medical students. Half of the colleges have no rules at all—nothing in the world to control a student except his final examination. If they have no rules, what is there to prevent a man from matriculating each winter, then going on back to his farm or clerkship until time to matriculate again? His fitness will depend upon the kind of examination he has to pass. We want this law passed which will force Georgia colleges to have a three years' course of study of six months each, so that no man can go before the Examining Board after the passage of the law who has not taken this course of study somewhere. It is simply to protect the people in Georgia from quackery, and every man should have to comply with these requirements before he attempts the practice of medicine.

FOUR WOMEN WHO REFUSED OÖPHORECTOMY, AND SUBSEQUENT HISTORIES.

BY H. M'HATTON, M. D., MACON, GA.

Case 1. Widow, thirty-five years of age, mother of three children, has been under my care for the past seven years. Has an anteversion and painful menstruation; uterine condition normal in other respects. During my time of attention she has never been in bed a day on account of her menses. Has all the care of her family, which she has supported for years, which has involved a great deal of labor and mental solicitude. About eighteen months ago she was advised oöphorectomy as the only means to make her future bearable. The operation being insisted upon, she absolutely refused. She has had no professional treatment since, and tells me to-day that she is perfectly well, which assertion is fully sustained by her mental and physical condition, as well as by the amount of work that she is doing.

Case 2. Married two years, age twenty-two. One child nearly a year old. Gives a history of painful menstruation with the usual train of nervous and hysterical symptoms previous to her pregnancy. Just before her marriage, after due consultation, oöphorectomy was advised, insisted upon and refused. She is to-day the picture of a healthy young matron, and assures me that she is not even aware of the existence of her womb. I have never examined this case.

Case 3. Married, thirty-one years of age, mother of two children. Was one of the worst cases of dysmenor-

rhœa that I ever saw. In bed about ten days of each month. All varieties of hysterical symptoms, pronounced hystero-epilepsy, nervous tone never being regained during intramenstrual period, mental disturbances decided at all times. After being under treatment of gynæcologists for years, with negative results, oöphorectomy was advised, with the absolute alternative of death or the asylum. Marriage occurred soon afterward. That woman is to-day, with the exception of an anteversion, perfectly well as far as her uterine condition goes, has a normal menstruation, no mental trouble, and is well known in the South as a leader of society and a woman of brains.

Case 4. Has been reported by Dr. Lusk as follows: The patient when I first saw her, some years ago, was a young woman of seventeen. She had suffered agonizing pains at monthly intervals, and was confined to the bed or couch for the greater part of the time. An examination revealed occlusion of the lower vagina. An opening was made and a large amount of retained blood and clots was removed from the upper vagina and uterus. The latter had been converted into a sac. For a long time thereafter the tubes remained thickened and tender. This was especially marked on the left side, to which the fundus of the uterus was drawn by peritoneal adhesions. Salpingotomy was plainly indicated, and I should have performed that operation had I obtained the patient's consent. Finally, however, she married. My advice in the matter was not asked. Last June the young woman called upon me. She had been married a year, and was seven months pregnant. The thing was inconceivable, but it was a fact. I will simply add that labor was normal, and that this woman is to-day as perfect a specimen of physical health as I know.

The above is a brief *résumé* of the histories of the only four women that I have ever known that refused this oper-

ation. The time that has elapsed since it was advised varies from eighteen months to twelve years. I do not go into the details of the cases, as the only point I wish to make is, that in each case the operation was advised and urged by gynæcologists both North and South, consequently they must have been convinced that these were cases demanding operative interference. Please compare the results obtained without operation with the results that would have followed the best operative success. Think at what cost cases two, three and four would have figured as successful cases in the statistics of the gentleman that wished to perform the operation—a possible sacrifice of marriage, and an absolute sacrifice of that greatest boon to all women, maternity. Cases three and four I have known most intimately since girlhood, and no language of mine can express the difference between what is and what might have been in these two cases.

In a practice of average size for twelve years I have had occasion to recommend the removal of the appendages once, excepting cases of ovarian tumors. That one proved to be a case of pyosalpinx. Several of my patients have drifted into other hands and had oöphorectomy performed, and, as far as I can learn, have been disappointed in the results each time. The best men in this special line of work are doing this operation less and less each year. Their place is being amply filled by lesser lights, with smaller numbers of individual cases, but with a yearly aggregate that is terrible to contemplate. By what combination of circumstances could one man, to fame unknown, in a small interior city, and in a short space of time, find one hundred and forty-four cases demanding abdominal section.

I will acknowledge that nearly all operators at present only operate for some pathological condition of the ovaries or tubes, in their conception. But one of our best pa-

thologists does not agree with them, and he has had unusual opportunities of examining bottled ovaries.

Any one desiring to follow up the line of thought suggested by these cases will be interested in the following late articles:

"The Remote Results of the Removal of the Ovaries and Tubes," W. T. Lusk, *American Journal of Diseases of Women and Children*, Vol. 25, No. 11. "The Abuse of Oöphorectomy in Diseases of the Nervous System," Allen McLain Hamilton, *N. Y. Medical Journal*, February 17th, 1893. "Abdominal Surgery and its Evolutions and Involutions," Joseph Eastman, *Journal American Medical Association*, March 11th, 1893.

DISCUSSION ON DR. M'HATTON'S PAPER.

Dr. W. W. Stewart, of Columbus: I rise to indorse Dr. McHatton's paper. I agree with him fully in his statement that oöphorectomy has been done entirely too often. I would like to ask him how many cases he has in his practice under treatment at present which are not well, after a long siege of suffering, that can be relieved no other way than by removal of the ovaries. I should think that removal of the ovaries would not be a proper method to relieve pain at the menstrual period that can be relieved by operation on the uterus.

As regards the papers which he has sighted, I should say that I have read most of the articles, and they deal principally with ovaries that have been removed for nervous and hysterical phenomena, and not for dysmenorrhœa.

Dr. McHatton, closing the discussion: I did not report these four cases in order to bring up the question of the indication of the operation. I simply cited them as cases coming under my observation where operations had been recommended by men of high standing. I did not touch

upon the advisability of the operation. The reason the operation was not performed was simply because the patients would not allow it. We all know that this operation has its place, and the men who urged it in the four cases reported doubtless had their individual reasons for doing so.

CONSTITUTION AND BY-LAWS

OF THE

MEDICAL ASSOCIATION OF GEORGIA.

CONSTITUTION.

(ADOPTED 1873.)

ARTICLE I.

NAME.

The name and style of this Association shall be "THE MEDICAL ASSOCIATION OF GEORGIA."

ARTICLE II.

OBJECTS.

SECTION 1. The object of this Association shall be to organize the medical profession of the State in the most efficient manner possible; to encourage a high standard of professional qualifications and ethics, and to promote professional brotherhood.

ARTICLE III.

MEMBERS.

SECTION 1. There shall be only one class of members in this Association. Any regularly educated white physician, who resides within the limits of this State, who is a graduate of a regular Medical College in good standing, and who adopts and conforms to the Code of Ethics of the American Medical Association, shall be eligible to membership in this body.

ARTICLE IV.

OFFICERS.

SECTION 1. The officers of the Medical Association of the State of Georgia shall be as follows: 1st, One President; 2d, Two Vice-Presidents; 3d, One Secretary; 4th, One Treasurer; 5th, Five Censors.

SEC. 2. The President shall be elected for one year; the Vice-Presidents for one year; the Secretary for five years; the Treasurer for five years—but every officer shall continue in office until his successor is elected and installed in office.

SEC. 3. The Board of Censors shall be elected at the present session by the Association—one for a period of five years, one for four years, one for three years, one for two years, one for one year; and annually hereafter the vacancy occurring in the Board of Censors shall be filled by election.

ARTICLE V.

PRESIDENT.

SECTION 1. The President shall be the chief executive officer of the Association. He shall preside at all the meetings of the body, preserve order, and give the casting vote when necessary, and perform such other duties as parliamentary usage imposes on presiding officers.

SEC. 2. He shall prepare and deliver, at the opening of each annual session, an address on some subject connected with the interests and objects of this Association.

SEC. 3. He shall appoint annually the requisite number of delegates to the American Medical Association, and to such other scientific bodies as it may be expedient to have this Association represented in.

SEC. 4. He shall appoint an orator, whose duty it shall be to prepare and deliver a public address on some subject

connected with medicine, or the medical profession, at the next annual meeting after his appointment.

SEC. 5. He shall, in the intervals between the annual sessions, direct and control the general policy and business of the Association, but always with careful attention to the precedents and customary usage of the Association and to its constitutional provisions.

ARTICLE VI.

VICE-PRESIDENTS.

SECTION 1. Vice-Presidents, in their order, shall, in case of the absence or the death of the President, discharge all the duties belonging to the presidential office.

ARTICLE VII.

SECRETARY.

SECTION 1. The Secretary shall have charge of all the books, papers and records of the Association, except those belonging to the office of Treasurer.

SEC. 2. He shall record the minutes of the Association at all its meetings.

SEC. 3. He shall conduct the correspondence of the Association under the direction of the President, and shall be chairman of the Publishing Committee.

SEC. 4. He shall keep the roll of the members of this body who have retained their membership by compliance with the provisions of this Constitution, and also the names of those who have forfeited membership, together with the cause of such forfeiture.

SEC. 5. In the absence of the Treasurer he shall collect the usual dues of the members in attendance at the regular sessions.

SEC. 6. The necessary expense incurred by the Secretary, in attending the annual sessions, shall be defrayed out of the funds of the Association.

ARTICLE VIII.

TREASURER.

SECTION 1. The Treasurer shall collect the annual dues and have custody of all the moneys belonging to the Association, and shall respond to the calls of the Secretary by order of the President, as far as he may have funds in his possession.

SEC. 2. He shall make annual reports of the financial condition of the Association, and the several amounts received during the year, and from whom; the several amounts due by the Association—if any—to whom, and on what account; the several amounts due to the Association —if any—by whom, and on what account.

SEC. 3. The necessary expense incurred by the Treasurer, in attending the annual sessions, shall be paid out of the funds of the Association.

ARTICLE IX.

CENSORS.

SECTION 1. The Board of Censors shall hold annual meetings, concurrently with the annual sessions of the Association, to whom shall be referred all applications for membership, with vouchers from two members; and in such case their decision shall be reported to the body for action. Three of their number shall constitute a quorum, and the Chairman and Secretary shall be designated by the President.

SEC. 2. They shall take cognizance of all offences against the Association or its Code of Ethics, and shall be authorized to strike from the list of membership all violators of its regulations, and shall report the names of the individuals, and the offence from which action has been taken, immediately to the Association, at which time, or at

the next succeeding meeting, all such individuals may have the right to appeal to that body.

SEC. 3. In the event of a failure of a quorum of the Board of Censors to attend at any annual meeting, it shall be the duty of the President to supply the vacancy by a temporary appointment.

ARTICLE X.

FINANCES.

SECTION 1. Every member of the Association shall pay annually into the Treasury such sum as the Association may determine, which amount, it is expected, will be paid during the session of the body.

ARTICLE XI.

CONSTITUTION.

SECTION 1. The Constitution shall take immediate effect from its adoption.

SEC. 2. The By-Laws now in operation, and Order of Business, are adopted, so far as they agree with the new Constitution.

ARTICLE XII.

ANNUAL MEETING.

SECTION 1. The annual meetings shall take place on the third Wednesday in April, and at such place as shall be designated by a majority of the Association.

ARTICLE XIII.

AMENDMENTS.

SECTION 1. Any amendment that may be offered to the Constitution shall lie over until the next annual meeting; and for its adoption at such meeting shall require a two-thirds vote of all present and voting.

BY-LAWS.

(Adopted 1875.)

ORDER OF BUSINESS.

The order of business of this body, unless ordered by a two-thirds vote of the members, shall be as follows:

1. Calling the Association to order by the President, or in case of his absence, by one of the Vice-Presidents.

2. Report of Committee of Arrangements.

3. President's Address.

4. Reading notes from absentees.

5. Election of members.

6. Reports of Special Committees.

7. Report of Committee on Publication.

8. Report of Committee on Necrology.

9. Report of Committee on Programme.

10. Voluntary Communications. [To be read by title and held subject to call of the Association.]

11. Appointments of Nominating Committee by the President. [This committee shall consist of one member from each county represented in the meeting. They shall nominate officers and standing committees. Their report shall be subject to the action of the Association.]

12. Selection of place for next annual meeting.

13. Unfinished business.

14. New business.

15. Report of Nominating Committee.

16. Appointing of Orator by the President.

STANDING COMMITTEES.

The Committee of Arrangements shall consist of five members who reside at the place selected for the ensuing meeting. It shall be their duty to provide suitable accommodations for the meetings of the Association, and to superintend the registration of the members in attendance.

The Committee on Publication shall consist of four members in addition to the Secretary, who is chairman *ex officio*. They shall provide for the publication of the minutes of the session, together with such papers as are deemed worthy. They shall also append to each volume of Transactions a copy of the Constitution and By-Laws of the Association, Roll of Membership, and Code of Ethics of the American Medical Association.

The Committee on Necrology shall consist of five members, whose duty it shall be to procure memorials of deceased members, and present them for publication in the Transactions.

ASSESSMENTS.

Each member shall pay annually to the Association such sums as the Association may determine.

OFFICERS—TIME OF ASSUMING THEIR DUTIES.

The Secretary and Treasurer shall enter upon the duties pertaining to their office at the time of their election; the President, Vice-Presidents and Censors, at the commencement of the annual meeting succeeding their election.

AMENDMENTS

I.

APPLICANTS FOR MEMBERSHIP.

The names of all applicants for membership shall first be presented to the Association in a body, and then referred to the Board of Censors. [See, also, Duties of Censors—Constitution, Article IX., Section 1.]

II.

INITIATION FEE.

An initiation fee of FIVE DOLLARS shall be required of every new member hereinafter elected to the Association; which fee must accompany the application for membership.

III.

ANNUAL ASSESSMENT.

The annual assessment of every member of the Association shall be THREE DOLLARS.

IV.

MEMBERS IN ARREARS.

The name of any member who shall fail for two consecutive years to pay the annual assessment shall be dropped from the roll of membership, the Treasurer notifying such member of the state of his account.

V.

TREASURER'S CALL FOR DUES.

The Treasurer shall, immediately after the meeting of the Association, issue a call for the dues of absent mem-

bers, by postal card, impressing upon them the need of prompt payment of the small assessment herein provided, by every member of the Association, and notifying them of the constitutional provision requiring the names of delinquents to be stricken from the roll of membership by the Secretary.

VI.

LIFE-MEMBERSHIP.

The assessment for life-membership shall be THIRTY dollars, exempting from annual dues, the sum so received to be invested and the interest used to pay annual dues of said life-member. A member may hold as many life-memberships as he desires, and shall be entitled to one vote for each.

VII.

PAPERS AND PUBLICATIONS.

1. No paper shall be read before this Association, by title, or otherwise, until a complete copy of such paper shall have been placed in the hands of the Secretary for publication in the Transactions. This rule shall not prevent the publication of such paper in any medical journal, at any time.

2. No article shall be published in the Transactions until it shall have been recommended by the Committee on Publication.

3. Repeals all conflicting laws.

VIII.

AMENDMENTS.

Any change in these By-Laws can only be made by a vote of two-thirds of all the members present.

The Secretary desires to call attention to the following resolution which was adopted by the Association, in Augusta,

in 1886, and, while it was not offered as an amendment to the By-Laws, yet, if carried out, it would operate in that way. The resolution is as follows:

"*Resolved*, That the second day of the next and each subsequent session of this Association be set apart for omnibus discussion."

ROLL OF MEMBERS

OF THE

Medical Association of Georgia.

1893.

ARRANGED ALPHABETICALLY.

ABBREVIATIONS.—P., President; V-P., Vice-President; S., Secretary; C. S., Corresponding Secretary; T., Treasurer; O., Orator; C., Censor; indicating the offices the members hold or have held.

Members are particularly requested to notify the Secretary promptly on making any changes in their postoffices.

The Secretary will esteem it a favor if any member will write him at once on noticing any inaccuracy or omission in the roll.

Name.	Postoffice.	County.	Admitted.
Adams, Wm. E.	Greensboro.	Greene	1891
Allen, H. D.	Milledgeville	Baldwin	1891
Anthony, E. R. (V-P)	Griffin	Spalding	1887
Armstrong, W. S.	Atlanta	Fulton	1886
Asbury, J. C.	Greensboro	Greene	1891
Atkinson, B.	Tarboro	Camden	1890
Avary, Arch	Atlanta	Fulton	1887
Avary, J. C.	Atlanta.	Fulton.	1889
Bacon, W. W.	Albany	Dougherty.	1890
Baily, J. W.	Gainesville	Hall.	1861
Baird, James B. (S., O.)	Atlanta.	Fulton.	1872
Baldwin, M. A.	Cuthbert.	Randolph	1890
Bardwell, E. L	Talbotton.	Talbot.	1872
Battle, H. L.	Wadley.	Jefferson	1891
Barnum, R. E. L	Savannah	Chatham	1892
Barwick, J. B.	Blythe	Richmond	1891
Baxley, W. H., Jr.	McBean	Richmond	1891
Barron, R. B	Macon	Bibb	1884

Name.	Postoffice.	County.	Admitted
Battey, H. H.	Rome	Floyd	1882
Battey, Robert (c., p.)	Rome	Floyd	1859
Battey, W. W.	Augusta	Richmond	1876
Baskin, R. H.	Byron	Houston	1889
Beasley, James A.	West Point	Troup	1884
Bell, A. K	Madison	Morgan	1889
Belt, L. J.	Herndon	Burke	1888
Benedict, Samuel C. (o.)	Athens	Clarke	1883
Bivins, R. T.	Ellaville	Schley	1893
Black, A. H	Thomaston	Upson	1893
Blain, Arthur C	Macon	Bibb	1890
Blanton, G. W	Chauncey	Dodge	1893
Bloomfield, James C	Athens	Clarke	1890
Boyd, Montague L.	Savannah	Chatham	1889
Boyd, A. F.	Iric	Bulloch	1891
Bozeman, E. K.	Friendship	Sumter	1892
Brantley, S. D.	Sandersville	Washington	1849
Bridges, J. T.	Cabaniss	Monroe	1890
Brigham, J. C.	Girard	Burke	1891
Brooks, C. A.	Americus	Sumter	1888
Brown, H. A.	Fort Valley	Houston	1891
Brown, S. E.	Eatonton	Putnam	1890
Bruce, W. W.	Thomasville	Thomas	1881
Bruce, W. W.	Hamilton	Harris	1892
Bryans, R. G.	Jackson	Henry	1890
Bryan, James H	Belleview	Talbot	1892
Bryant, W. J.	Summerville	Chattooga	1892
Buford, O. H.	Cartersville	Bartow	1891
Bullard, W. L.	Columbus	Muscogee	1882
Burdett, J. R.	Tennille	Washington	1889
Burford, R. E. L.	Brunswick	Glynn	1890
Burford, H	Brunswick	Glynn	1888
Butts, R. W.	Gordon	Wilkinson	1892
Calhoun, A. W. (v-p., c., p.)	Atlanta	Fulton	1874
Calhoun, F. R. (v-p.)	Cartersville	Bartow	1873
Carmichael, J. H	Augusta	Richmond	1891
Carter, C. J	Lake Park	Lowndes	1889
Cato, F. J	DeSoto	Sumter	1893
Cato, R. E	Preston	Webster	1893
Chappell, Roy J.	Dublin	Laurens	1890
Charlton, T. J	Savannah	Chatham	1887
Cheatham, W. B.	Dawson	Terrell	1880
Clark, M. A	Barnesville	Pike	1893
Clark, P. S.	Darien	McIntosh	1890

Name.	Postoffice.	County.	Admitted.
Colding, C. H.	Savannah	Chatham	1882
Cole, J. F.	Carrollton	Carroll	1884
Coleman, Thomas D	Augusta	Richmond	1891
Comas, P. H	Baxley.	Appling	1889
Connally, E. L. (C.)	Atlanta	Fulton	1860
Cortelyou, P. R. (V-P.)	Marietta	Cobb	1887
Crawford, A. H	Abbeville	Wilcox	1893
Crawford, J. M	Atlanta	Fulton	1888
Crawford, O. G	Sasser	Terrell	1893
Croley, John G	Milledgeville	Baldwin	1893
Crozier, J. H	Cedar Springs	Early	1889
Crow, W. A	Atlanta	Fulton	1892
Currie, M. L	Mt. Vernon	Glynn	1890
Culpepper, W. F	Senoia	Coweta	1892
Crumley, W. F	Oglethorpe	Macon	1892
Cox, Ross P.	Rome	Floyd	1891
Darby, J. I	Americus.	Sumter	1893
Davidson, A. C	Sharon	Taliaferro	1887
Davis, Jeff	Toccoa	Habersham	1893
Davis, Wm. L	Albany	Dougherty	1893
Davis, T. B	Newnan	Coweta	1892
Darden, N. M	Norwood	Warren	1891
Deadwyler, M. P. (V-P.)	Elberton	Elbert	1868
Dean, J. G	Dawson	Terrell	1889
Derry, H. P	Macon	Bibb	1889
Divine, K. C	Atlanta	Fulton	1882
Dillard, S. H	Greensboro	Greene	1891
Doster, B. R. (V-P. C.)	Blakely	Early	1873
Doughty, W. H. (C.)	Augusta	Richmond	1857
Doughty, W. H. Jr.	Augusta	Richmond	1880
Douglass, J. E.	Cuthbert	Randolph	1889
Dozier, R. T.	Coleman	Randolph	1893
Drewry, S. C	Griffin	Spalding	1892
Dudley, M. J.	Sonoraville	Gordon	1880
Dugas, George C	Augusta	Richmond	1880
Duggan, J. H	Stephensville	Wilkinson	1884
Duncan, J. W	Atlanta	Fulton	1883
Duncan, William	Savannah	Chatham	1868
Dunwoody, J. A. (V-P.)	Brunswick	Glynn	1888
Earnest, J. G.	Atlanta	Fulton	1882
Elkin, W. S.	Atlanta	Fulton	1882
Elliott, W. H. (P.)	Savannah	Chatham	1884
England, W. G	Cedartown	Polk	1886

Name.	Postoffice.	County.	Admitted.
Field, J. C	Oglethorpe	Macon	1889
Fitts, W. L.	Carrollton	Carroll	1891
Folks, G. P	Waycross	Ware	1890
Ford, DeSaussure (V-P., C., P.)	Augusta	Richmond	1857
Foster, Eugene (V-P., C., P.)	Augusta	Richmond	1875
Fowler, C. C	Rome	Floyd	1891
Freeman, S. H	Lawrenceville	Gwinnett	1891
Gantier, W. T.	Columbus	Muscogee	1892
Garlington, T. R.	Rome	Floyd	1893
Gaulden, Samuel S.	Quitman	Brooks	1892
Gann, Wm. F.	Columbus	Muscogee	1891
Garland, J. T	Hillsboro	Jasper	1889
Gaston, J. McF.	Atlanta	Fulton	1884
Gay, D. E.	Sidney	Emanuel	1875
Gerdine, John (C., V-P.)	Athens	Clarke	1882
Gheesling, J. H.	Greensboro	Greene	1891
Gilmer, Wm. B.	Macon	Bibb	1893
Goldsmith, W. S.	Stone Mountain	DeKalb	1893
Goodrich, E. C. (T.)	Augusta	Richmond	1876
Googe, W. R.	Abbeville	Wilcox	1892
Goss, I. H.	Athens	Clarke	1877
Grandy, L. B.	Atlanta	Fulton	1893
Greene, C. C	Atlanta	Fulton	1887
Goolsby, R. C.	Juliette	Monroe	1891
Green, S. H.	Oakdale	Fulton	1892
Griffin C. F	Cassville	Bartow	1888
Griggs, A. W. (O., V-P., C., P.)	West Point	Troup	1866
Griggs, R. E.	Columbus	Muscogee	1892
Griggs, J. W	West Point	Troup	1892
Grimes, George J. (V-P.)	Columbus	Muscogee	1872
Ham, E. P	Gainesville	Hall	1892
Hall, Charles H. (C.)	Macon	Bibb	1870
Hallum, J. W.	Carrollton	Carroll	1891
Harrington, A. L.	West Point	Troup	1892
Hagan, Hugh	Atlanta	Fulton	1892
Harbin, R. M	Calhoun	Gordon	1891
Hardman, L. G.	Harmony Grove	Jackson	1877
Hardman, W. B.	Harmony Grove	Jackson	1892
Hardon, Virgil O. (O.)	Atlanta	Fulton	1886
Harris, R. B	Savannah	Chatham	1885
Harris, N. O.	Atlanta	Fulton	1887
Harris, E. A.	Burke	Midville	1893
Harison, W. H., Jr.	Augusta	Richmond	1886

Name.	Postoffice.	County.	Admitted.
Hart, C. C.	Cross Keys	DeKalb	1888
Hatch, M. G. (c.)	Tennille	Washington	1880
Hatchett, J. M	Fort Gaines	Clay	1892
Hawkins, A. M. F	Ball Ground	Cherokee	1891
Hawes, A. S.	Americus	Sumter.	1891
Head, J. M	Zebulon	Pike.	1883
Heard, J. H	Walden	Bibb	1884
Henderson, J. R.	Sun Hill	Washington	1884
Herrman, J. D	Eastman	Dodge	1884
Hickman, C. W.	Augusta	Richmond	1891
Hill, J. J.	Washington	Wilkes	1880
Hillsman, P. L	Albany	Dougherty	1871
Hobbs, A. G	Atlanta	Fulton	1882
Hogg, J. N.	West Point.	Troup	1892
Holliday, W. Z	Augusta	Richmond	1884
Holmes, J. B. S. (v-p., p.)	Rome	Floyd	1872
Holt, W. F. (v p., p.)	Macon	Bibb	1867
Hopkins, T. S.	Thomasville	Thomas	1865
Hopkins, J. G.	Thomasville	Thomas	1890
Horine, George S	Americus	Sumter	1893
Horrocks, J. Marrion	Thomasville	Thomas	1893
Howell, Dan. H. (s.)	Atlanta	Fulton	1878
Hull, J. M. (v-p.)	Augusta	Richmond	1882
Hummell, George C.	Savannah	Chatham	1884
Humphries, W. C.	Acworth	Cobb	1890
Humphries, J. R	Acworth	Cobb	1876
Hurt, Charles D	Atlanta	Fulton	1890
Hutchins, M. B.	Atlanta	Fulton	1892
Ildton, H. W.	Mattie	Dodge	1892
Jarnagin, W. C	Atlanta	Fulton	1882
Jelks, N. P	Hawkinsville	Pulaski	1882
Jefferson, Wesley.	Buena Vista	Marion	1892
Johnson, S. W	Graham	Appling	1888
Johnson, J. C.	Macon	Bibb	1875
Johnson, A. S.	Bowman	Elbert	1891
Johnson, C. Evans	Atlanta	Fulton	1892
Johnson, L. M	Rowland	Upson	1893
Jones, L. H.	Norcross	Gwinnett	1887
Jones, Louis H	Atlanta	Fulton	1890
Jones, L M.	Milledgeville	Baldwin	1880
Jones, R. D.	Summerville	Chattooga	1892
Jones, T. S.	Jeffersonville	Twiggs	1893
Jordan, Seth N	Columbus	Muscogee	1892

Name.	Postoffice.	County.	Admitted.
Keaton, P. H.	Damascus	Early	1889
Kelley, J. M	Griffin	Spalding	1885
Kelley, T. J	Indian Springs	Butts	1884
Kendrick, W. S. (o.)	Atlanta	Fulton	1874
Kendrick, R. T	Alapaha	Berrien	1891
Kime, R. R.	Atlanta	Fulton	1892
Kenyon, O. T.	Weston	Webster	1892
Lallerstedt, T. L.	Panola.	DeKalb	1868
Lamb, Theodore	Augusta.	Richmond	1886
Lancaster, J. F	Forsyth	Monroe	1884
Lane, E. W. (v-p.)	Scarboro	Screven	1885
Lanier, Sidney	Guyton	Effingham	1890
LeHardy, J. C. (t., v-p.)	Savannah	Chatham	1868
Lockhart, V. D.	Homer	Banks	1891
Logan, A. J	Roney.	Sumter	1882
Love, T. D	Atlanta	Fulton	1887
Mallory, R. A.	Concord	Pike.	1893
Maloy, W. C.	Rhine	Dodge	1893
Maloy, John K	Temperance	Telfair	1890
Mathis, A.	Macon	Bibb	1872
Mathews, W. J	Zetella.	Spalding	1892
Matthews, S. M.	Quitman	Brooks	1890
Malone, J. D	Marietta.	Cobb	1891
McDonald, C. M.	Leesburg	Lee	1892
McDuffie, James H.	Columbus	Muscogee	1893
McHatton, H. (c. v-p.)	Macon	Bibb	1883
McIntosh, T. M.	Thomasville	Thomas	1874
McIntosh, P. A.	Thomasville.	Thomas	1893
McKown, J. A	Jonesboro.	Clayton	1891
McKown, T. D.	Chickamauga.	Walker	1887
McLeod, R. D.	Lyons.	Montgomery	1893
McMaster, H. B.	Waynesboro	Burke	1888
McRae, A. B	Seville	Wilcox	1893
McRae, C. D	Rochelle	Wilcox	1893
McRae, F. W	Atlanta	Fulton	1887
Miller, R. L	Sandersville	Washington	1891
Mitchell, J. W.	Hamilton	Harris	1891
Mitchell, Thomas S	Columbus	Muscogee	1892
Miller, G. T.	Americus	Sumter	1892
Monroe, Henry S	Ellaville	Schley	1893
Moore, K. P. (v-p., o. t., p. s.)	Macon	Bibb	1871
Mooney, H. R.	Ellabell	Bryan	1891
Moreland, A. C.	Forsyth	Monroe	1892

Name.	Postoffice.	County.	Admitted.
Morgan, J. B.	Augusta	Richmond	1891
Mobley, H. A.	Byronville	Dooly	1891
Mulligan, G. W. (V-P., P.)	Washington	Wilkes	1883
Neal, J. W.	Scotland.	Telfair.	1892
Nicolson, Wm. Perrin.	Atlanta	Fulton	1883
Nichols, D. N.	Laston.	Bulloch	1891
Niles, Geo. M.	Marshallville	Macon	1893
Noell, S. G.	Ypsilanti	Talbot	1892
Noble, G. H.	Atlanta	Fulton	1883
North, A. G.	Milledgeville	Baldwin	1887
Nunn, R. J. (C., V-P., P.)	Savannah	Chatham	1867
O'Daniel, Mark H. (O., C., V-P.)	Macon	Bibb	1882
O'Daniel, William (T., P.)	Bullard	Twiggs	1870
O'Daniel, W. A. (O.)	Milledgeville	Baldwin	1886
Owens, W. W.	Savannah	Chatham	1891
Patterson, F. D.	Lumpkin	Stewart	1892
Parks, W. B.	Atlanta	Fulton	1882
Pattillo, John T.	West Point	Troup	1892
Paige, John D.	Savannah	Chatham	1892
Peete, C. H.	Macon	Bibb.	1893
Pendergrass, J. B.	Jefferson	Jackson	1883
Perdue, H	Barnesville	Pike	1889
Phillips, S. Latimer	Savannah.	Chatham	1890
Poland, S. B.	Griswoldville	Jones	1891
Ponder, W. P.	Forsyth	Monroe	1885
Powell, T. O. (P)	Milledgeville	Baldwin	1867
Powell, John F.	Kramer	Wilcox	1893
Quarterman, K. A	Walthourville	Chatham	1885
Quillian, H. P.	Arp	Banks	1888
Quillian, D. D.	Athens	Clarke	1892
Quinn, C. T	Naylor.	Lowndes.	1893
Ramsaur, D. H.	Rome	Floyd	1888
Read, J. B	Savannah	Chatham	1851
Richardson, C. H.	Montezuma	Macon.	1886
Richardson, E. H. (O., C., V-P.)	Atlanta	Fulton	1878
Ridding, J. H.	Waycross	Ware	1893
Ridley, F. M. (O.)	LaGrange	Troup	1887
Ridley, R. B.	Atlanta	Fulton	1887
Roberts, J. B. (V-P.)	Sandersville	Washington	1875
Rogers, W. T.	Coleman	Randolph	1893
Rowland, A. A.	Brunswick.	Glynn	1890
Rose, E. P.	Valdosta.	Lowndes.	1893

Name.	Postoffice.	County.	Admitted.
Roy, G. G	Atlanta	Fulton	1878
Roy, C. D	Atlanta	Fulton	1892
Royal, A. R	Abbeville	Wilcox	1892
Ross, James T	Macon	Bibb	1891
Rumble, S	Goggins	Monroe	1891
Scarbrough, J. F	Tippettville	Dooly	1893
Scott, H. F. (o)	Atlanta	Fulton	1879
Sessoms, W. C	Nicholls	Coffee	1893
Shannon, John R	Cabaniss	Monroe	1893
Shorter, James H	Macon	Bibb	1893
Singleton, O. G	Fort Valley	Houston	1892
Sego, J. T	Richmond	Richmond	1885
Sibbett, W. F	Broxton	Coffee	1890
Simpson, W. T	Smithville	Lee	1892
Simmons, A. B	Savannah	Chatham	1891
Sims, E. H	Columbus	Muscogee	1892
Sims, J. C	Columbus	Muscogee	1892
Slack, Henry R	LaGrange	Troup	1893
Smith, A. A. (V-P., P.)	Hawkinsville	Pulaski	1875
Smith, B. F	Elberton	Elbert	1893
Smith, C. H	Ellaville	Schley	1893
Smith, H. J	Blackshear	Pierce	1887
Solomon, J. C	Flovilla	Butts	1884
Sorrells, R. P	Athens	Clarke	1887
Spence, J. M	Waresboro	Ware	1890
Spier, C. P	Wadley	Jefferson	1886
Standifer, W. B	Blakely	Early	1886
Stephens, L. P	Atlanta	Fulton	1888
Stewart, J. F	Griffin	Spalding	1892
Stewart, W. W	Columbus	Muscogee	1892
Stevens, V. P	Putnam	Marion	1892
Sterling, W. L	Atlanta	Fulton	1878
Stone, George H	Savannah	Chatham	1875
Stovall, A. S. J	Elberton	Elbert	1886
Strother, William A	Albany	Dougherty	1867
Sullivan, J. S	Macon	Bibb	1893
Tate, William B	Tate	Pickens	1890
Taylor, A. P	Thomasville	Thomas	1873
Taylor, J. P	Haralson	Coweta	1859
Taylor, R. H	Griffin	Spalding	1879
Tarver, F. E	Hephzibah	Richmond	1891
Terrell, E. B	Greenville	Meriwether	1891
Terrell, H. W	Greenville	Meriwether	1892

Name.	Postoffice.	County.	Admitted.
Terrell, W. W	Greenwood	Montgomery	1893
Thomas, F. B	Americus	Sumter	1893
Tinsley, A. S	Augusta	Richmond	1891
Thompson, P. H	Bluffton	Clay	1886
Todd, J. S. (o., c., p.)	Atlanta	Fulton	1872
Toole, J. A	Macon	Bibb	1889
Trimble, G. C	Bullard	Twiggs	1891
Tye, R. L	McDonough	Henry	1887
Tyson, J. D	Andrian	Emanuel	1893
Van Goidtsnoven, E	Atlanta	Fulton	1887
Vanhorne, J. T	Monroe	Walton	1892
Walker, W. F	Dranesville	Marion	1892
Wall, H. A	Bronwood	Terrell	1892
Walker, J. L	Waycross	Ware	1884
Weaver, J. D	Eatonton	Putnam	1890
Weaver, J. A	Buena Vista	Marion	1892
Wegefarth, J. A. W	Savannah	Chatham	1891
Welchel, John E	Gillsville	Hall	1891
Westmoreland, W. F. (o.)	Atlanta	Fulton	1886
Whelchel, C. C	Lula	Hall	1893
Whitaker, J. M	Milledgeville	Baldwin	1881
Whitehead, A. G. (v-p., p.)	Waynesboro	Burke	1869
Wills, T. J	Danielsville	Madison	1889
Williams, W. P	Waycross	Ware	1890
Williams, H. J. (o.)	Macon	Bibb	1883
Williams, G. B	Tallokas	Brooks	1892
Wilcox, G. A	Augusta	Richmond	1891
Wimberly, John L	Lumpkin	Stewart	1893
Winchester, E. A	DeSoto	Sumter	1893
Winchester, J. H	Americus	Sumter	1893
Winchester, W. R	Macon	Bibb	1889
Wise, B. T	Plains	Sumter	1893
Wood, W. E	Dalton	Whitfield	1891
Wright, Thomas R	Augusta	Richmond	1880
Young, S. E	Midland	Muscogee	1892

NON-RESIDENTS.

Perry, Thomas B., U. S. Marine Hosp. Sr.,	Fortress Monroe,	Va	1891
West, G. R	Chattanooga	Tennessee	1888
Gann, Dewell	Benton	Arkansas	1887
Stockton, F. O	Newark	New Jersey	1889

HONORARY LIST.

This list is designed for aged, retired or infirm members of the Association, who are entitled to all the privileges of the Association without the payment of dues.

The Secretary would be obliged to members to report any names that should go on this list.

Name.	Postoffice.	County.	Admitted.
Alexander, J. F. (P., C., V-P.)	Atlanta	Fulton	1849
Bell, A. A	Madison	Morgan	1858
Coleman, J. T.	Perry	Houston	1851
Brawner, W. M.	Lexington	Oglethorpe	1883
Hoyt, W. D	Rome	Floyd	1871
Leitner, C. B	Columbus	Muscogee	1852
Love, Wm. Abram	Atlanta	Fulton	1866
Miller, H. V. M.	Atlanta	Fulton	1851
Powell, T. S. (V-P.)	Atlanta	Fulton	1857
Smith, J. B.	Perry	Houston	1870
Beasley, ——	West Point	Troup	1849

In Memoriam.

☞ SPECIAL REQUEST TO EVERY MEMBER.—The Secretary *earnestly requests each member of the Association* to aid him *in filling* THE BLANKS in the following Roll of Deceased Members *by making the necessary inquiries* in their respective cities and counties, *and writing him at once* on obtaining the desired information.

Name.	Postoffice.	County.	Admitted.	Died.
Adams, C. B.	Augusta	Richmond	1868	1875
Alexander, J. R.		Floyd	1849	
Alexander, L. B.	Forsyth	Monroe		1891
Alfriend, E. W. (V-P.)	Albany	Dougherty	1852	1886
Arnold, R. D. (V-P., P.)	Savannah	Chatham	1849	1876
Ashworth, A. B. (S.)	Atlanta	Fulton	1887	1889
Avery, J. C	Decatur	DeKalb	1859	1873
Baker, A. H	Augusta	Richmond	1876	1891
Ballinger, M. R.	Floyd Springs	Floyd	1860	1886
Banks, J. T. (V-P., P.)	Griffin	Spalding	1858	1880
Barkwell, T. J	Hawkinsville	Pulaski	1859	
Barnett, J. W	Raytown	Taliaferro	1880	1890
Battle, H. L	Russellville	Monroe	1849	
Bell, T. W	Busbyville	Houston	1853	
Bignon, H. A.	Augusta	Richmond	1852	1870
Billing, S. A	Columbus	Muscogee	1855	1872
Bizzell, W. D. (V P.)	Atlanta	Fulton	1882	1890
Black, R. C. (T.)	Augusta	Richmond	1852	1860
Bomar, B. F	Atlanta	Fulton	1859	
Borcheim, L. E.	Atlanta	Fulton	1886	1887
Boswell, S. J. (V-P.)	Columbus	Muscogee	1855	
Bothwell, D. J	Vienna	Dooly	1849	
Bozeman, J. F	Atlanta	Fulton	1855	1877
Boring, John M. (V-P.)	Atlanta	Fulton	1856	1891
Brandon, D. S	Thomasville	Thomas	1873	1878
Broadhurst, W. W	Augusta	Richmond	1852	1861
Bruce, R. J.	Thomasville	Thomas	1874	1880
Bunn, William	Wilna	Houston	1854	
Burgess, Wm. R. (T., O.)	Macon	Bibb.	1870	1878
Burney, S. W. (P.)				1876

Name.	Postoffice.	County.	Admitted.	Died.
Campbell, Robert	Augusta	Richmond	1849	1885
Carroll, J. C	Laurens Hill	Laurens	1857	1870
Carroll, R. C	Augusta	Richmond	1873	1882
Castlen, F. G	Macon	Bibb	1867	1874
Carlton, J. M	Athens	Clarke	1882	1883
Charlton, T. J. (C)	Savannah	Chatham	1862	1886
Charters, W. M. (P)	Savannah	Chatham	1851	1883
Chase, D. S.	Augusta	Richmond	1852	
Clark, S. B	Rich. Factory	Richmond	1852	
Campbell, H. F. (O., V-P., P.)	Augusta	Richmond	1851	1892
Coe, J. N	Flat Rock	Pike	1856	
Coleman, John S	Augusta	Richmond	1891	1892
Colley, F. S. (P)	Monroe	Walton	1856	
Cooper, G. F. (O., S., V-P)	Sumter	Americus	1849	1882
Copeland, A. B	Hamilton	Harris	1878	1882
Cornwall, G. H	Hillsboro	Jasper	1854	
Crawford, S. S	Augusta	Richmond	1857	
Crump, E. D	Herndon	Burke	1872	1881
Cumming, H. M	Augusta	Richmond	1862	1887
Cunningham, L. S	Big Creek	Forsyth	1859	1862
Cunningham, W. D.	Jasper	Pickens	1859	1866
D'Alvigney, N	Atlanta	Fulton		1877
Davenport, C. W	Point Peter	Oglethorpe	1852	
Davenport, H. S	Calhoun	Gordon	1859	
Davis, W. L	Albany	Dougherty	1849	
Dean, S. H	Conyers	Rockdale	1856	
Dearing, W. E	Augusta	Richmond	1852	1867
DeCortez, C. A	Savannah	Chatham	1872	
Dickinson, J. T	Albany	Dougherty	1857	
Dickinson, R. Q. (V-P., P.)	Albany	Dougherty	1850	
Dobbins, W. O	Fort Gaines	Clay	1883	1890
Dugas, L. A. (P.)	Augusta	Richmond	1852	1884
Dupree, L. J	Camilla	Mitchell		
Engram	Montezuma	Macon	1881	1883
Eve, Jos. A	Augusta	Richmond	1852	1886
Eve, S. C	Augusta	Richmond	1868	1884
Felder, W. L	Augusta	Richmond	1857	1867
Fish, J. D. (T)	Savannah	Chatham	1875	1879
Fitzgerald, E	Macon	Bibb	1882	1885
Ford, L. D. (P)	Augusta	Richmond	1849	1884
Fort, Moses T	Hawkinsville	Pulaski	1859	1878
Franklin, M. A	Macon	Bibb	1849	1858
Frazier, W. M	Hawkinsville	Pulaski	1850	

Name.	Postoffice.	County.	Admitted.	Died.
Gaither, Henry	Oxford	Newton	1851	
Gaither, B. T	Oxford	Newton	1852	1853
Gardner, J. W	Augusta	Richmond	1857	
Girardy, Edward	Augusta	Richmond	1852	1859
Gordon, J. M.	Savannah	Chatham	1849	
Gray, James A. (s)	Atlanta	Fulton	1882	1887
Gray, S. H	Barnesville	Pike	1871	1885
Green, A. B	Pond Town	Sumter	1849	
Green, H. K	Macon	Bibb	1849	1867
Green, Thomas F	Milledgeville	Baldwin	1849	1879
Gregory, J. D		Sumter	1849	
Grimes, T. W	Columbus	Muscogee	1855	1882
Habersham, J. C	Savannah	Chatham	1853	
Habersham, J.C., Jr. (v-p.)	Savannah	Chatham	1866	1881
Habersham, S. E	Eatonton	Putnam	1870	
Hammond, D.W. (v-p., c.)	Macon	Bibb	1857	1887
Harden, W. P	Harmony Grove	Jackson	1852	1885
Harrell, W. J	Bainbridge	Decatur	1874	1881
Harris, S. N. (v-p.)	Savannah	Chatham	1851	1854
Harrison, Gabriel	Macon	Bibb		1862
Harris, Juriah (o., v-p.)	Savannah	Chatham	1852	1876
Havis, M. W	Perry	Houston	1854	1890
Hart, A. C	Waynesboro	Burke	1852	
Hawes, E. C	Appling	Columbia	1862	
Hawkins, S. B	Americus	Sumter	1871	1892
Heard, T. O	Griffin	Spalding	1867	
Hendrick, J. B	Covington	Newton	1857	1881
Henry, G. C	West Point	Troup	1872	
Hook, E. B	Augusta	Richmond	1857	1862
Houston, J. P. R	Savannah	Chatham	1873	1892
Hoxey, Thomas	Columbus	Muscogee	1849	1853
Hollingsworth, W. T	Madison	Morgan	1857	1893
Holmes, G. W. (v-p., p., c.)	Rome	Floyd	1867	1890
Holmes, T. M. (o.)	Rome	Floyd	1883	1891
Hamilton, J. L	Stone Mountain	DeKalb	1859	1890
Hunter, E. H. W	Louisville	Jefferson	1857	1883
Ingraham, E. P	Albany	Dougherty	1870	1873
Irvine, Robert	Augusta	Richmond	1880	1881
Johnson, C. W	Macon	Bibb	1870	1875
Johnson, John M	Atlanta	Fulton	1866	1886
Jones, B. O.	Atlanta	Fulton		
Jones, J. W	Atlanta	Fulton	1857	1871

Name.	Postoffice.	County.	Admitted.	Died.
Kennedy, L. P.	Atlanta	Fulton	1890	1892
Kennebrew, Henry	Athens	Clarke	1883	1886
Kirkscey, E. J. (V-P.)	Columbus	Muscogee	1871	1877
Kollock, P. M. (P)	Savannah	Chatham	1852	1872
Lamar, T. R. (V-P)	Macon	Bibb	1849	1859
Lightfoot, W. S	Macon	Bibb	1849	1864
Lackhart, R. H.	Columbus	Muscogee	1855	1859
Lattimer, C. T	Macon	Bibb	1889	1889
Lawrence, L. L	Blountsville	Jones	1889	1890
Long, Crawford W	Athens	Clarke	1849	1878
Longan, J. P. (P)	Atlanta	Fulton	1858	1891
Lumpkin, George	Maxey's Depot	Oglethorpe	1859	
Lumpkin, S. P	Watkinsville	Clarke	1859	
Mackie, J. D.	Augusta	Richmond	1852	1854
Maffit, R. G. W.	Dalton	Whitfield	1859	
Matthews, W. B	Fort Valley	Houston	1884	1885
McBride, W. G	Oconee	Washington	1850	1873
McDowell, J. M	Barnesville	Pike	1887	1891
McGolrick, R.	Macon	Bibb	1849	1853
McKinley, C. A	Newnan	Coweta	1859	
McMillan, J. E	Columbus	Muscogee	1872	1883
Means, A. (V-P.)	Oxford	Newton	1851	1883
Means, O S	Oxford	Newton	1857	
Meiere, William S	Madison	Morgan	1857	
Milam, R. J	Fairburn	Campbell	1882	1882
Morrison, D. H.	Savannah	Chatham	1868	1869
Musgrove, W. C. (C., S.)	Midville	Burke	1849	1876
Nash, R. A.	Marion	Twiggs	1849	
Nisbet, R. H.	Eatonton	Putnam	1854	1873
Nottingham, C. B. (S., T., C., P.)	Macon	Bibb	1849	1875
Nunn, R. M.	Savannah	Chatham	1871	1873
Ogilby, H. J. (V-P.)	Madison	Morgan	1849	1873
O'Keefe, D. C. (S.)	Atlanta	Fulton	1852	1871
Orme, L. H. (S.)	Atlanta	Fulton	1866	1872
O'Sullivan, ——	Cork	Lee	1849	
Owen, J. D.		Baldwin	1850	
Parsons, J. M.	Russellville	Monroe	1845	
Pitts, G. W.	Star	Butts	1859	
Posey, J. F.	Savannah	Chatham	1851	
Pringle, W.	Covington	Newton		
Ragan, Ishman H.	Palmyra	Lee	1856	
Raines, Thomas	Atlanta	Fulton	1872	1883

Name.	Postoffice.	County.	Admitted.	Died.
Raines, T. L.	Atlanta	Fulton	1882	1884
Rauschenberg, Christ'n	Atlanta	Fulton	1861	1878
Richardson, C. P.	Savannah	Chatham	1851	1853
Ridley, R. A. T. (V-P.)	LaGrange	Troup	1859	1871
Robertson, J. J.	Washington	Wilkes	1852	1872
Roddy, R. L. (V-P.)	Forsyth	Monroe	1849	1878
Ruffin, W. R.	Augusta	Richmond	1852	
Russell, W. J.	Lawrenceville	Gwinnett	1861	
Ryan, T. D. L	Hawkinsville	Pulaski	1859	1876
Stafford, S. J.	Madison	Morgan	1856	1859
Searcy, D. B	Bolingbroke	Monroe	1849	1885
Shropshire, J. W.			1871	
Simmons, J. N.	Atlanta	Fulton	1850	1871
Simmons, J. S	Gainesville	Hall	1873	1881
Simmons, S. B.	Augusta	Richmond	1852	1867
Simmons, T. A.	Irwington	Wilkinson	1871	1872
Slaughter, J. T.	Villa Rica		1859	1889
Smith, A. D.	Montezuma	Macon	1871	
Smith, C. W.	Jonesboro	Clayton	1859	
Smith, Hiram	Augusta	Richmond	1876	1888
Smith, H. H.	Augusta	Richmond	1886	1887
Smith, R. M. (C.)	Athens	Clarke		1879
Smith, Thomas	Savannah	Chatham	1858	1876
Spier, W. A	Grantville	Coweta	1859	
Stallings, J. D.	Preston	Webster	1871	
Stanford, F. A.	Columbus	Muscogee	1849	1885
Starr, E. P.	Savannah	Chatham	1868	1873
Steele, H.	Knoxville	Crawford	1849	
Steele, R. T.	Fairburn	Campbell	1849	
Steiner, H. H.	Augusta	Richmond	1857	1892
Stephens, W. B.	Forsyth	Monroe	1849	
Stewardson, Thomas	Savannah	Chatham	1849	
Stozier, L. L.	Albany	Dougherty	1867	
Sutton, C. B.		Lee	1856	
Taliaferro, V. H. (V-P.)	Atlanta	Fulton	1857	1887
Taylor, E. T.	Columbus	Muscogee	1855	
Taylor, R. N.	Hawkinsville	Pulaski	1850	
Thomas, J. G. (V-P., P., C., T.)	Savannah	Chatham	1867	1885
Thompson, Charles	Macon	Bibb	1849	1854
Trammell, A. A.	Forsyth	Monroe	1856	
Tucker, O. W.	Brunswick	Glynn	1890	1891
Underwood, J. B.	Cave Spring	Floyd	1860	1881

Name.	Postoffice.	County.	Admitted.	Died.
Van Meter, J. N.	Euharlee	Bartow	1879	1881
Wall, W. W	Calhoun	Gordon	1860	
Walker, T. F.	Cochran	Pulaski	1859	1888
Walker, F	Macon	Bibb	1889	1891
Ware, A. E. O			1859	
Waring, J. J	Savannah	Chatham	1853	1888
Watson, W. A	Jefferson	Jackson	1883	1889
Wells, C. H.	Savannah	Chatham	1853	1854
Wells, W. B.	Chattanooga	Tennessee	1873	1891
West, Charles (P.)	Perry	Houston	1849	
West, C. W.	Savannah	Chatham	1853	1859
Westmoreland, W. F. (P.)	Atlanta	Fulton	1856	1890
White, S. G. (V-P.)	Milledgeville	Baldwin	1868	1877
Whitlock, Isaac W.	Washington	Wilkes	1852	1853
Wile, Henry	Atlanta	Fulton	1886	1887
Wiley, J. B.	Macon	Bibb	1849	
Williams, T. L.		Dooly	1849	
Williams, W. L.	Fayetteville	Fayette	1873	
Willingham, Willis	Lexington	Oglethorpe	1849	1872
Winn, G. A.	Bolingbroke	Monroe	1849	1862
Wirsen, G. F.	Rutledge	Morgan	1871	1884
Woodson, C. T.	Wilna	Houston	1854	
Wooten, W. H.	Lexington	Oglethorpe	1852	1860
Word, T. J.	Rome	Floyd	1887	1890
Word, R. C.	Atlanta	Fulton	1855	1890
Wragg, J. A.	Savannah	Chatham	1853	
Wright, P. H.	Macon	Bibb	1869	1888
Yonge, Easton	Savannah	Chatham	1880	

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